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## Teachers' Perceptions of Literacy Instruction With Autistic Students During the COVID-19 Pandemic

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*Walden University*

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# Walden University

College of Education

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Heather A. Marzenski

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Walden University  
2021

Abstract

Teachers' Perceptions of Literacy Instruction With Autistic Students During the COVID-

19 Pandemic

by

Heather A. Marzenski

MAEd, Baldwin Wallace University, 2016

BA, Baldwin Wallace University, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

December 2021

## Abstract

Families and educators have voiced concerns about the literacy skills of students with autism spectrum disorder (ASD), and the COVID-19 pandemic has amplified the situation. Pandemic era studies have demonstrated the ramifications that students with ASD have faced, including regression of literacy skills, lower grades, lack of support services, and subpar instruction. Teachers' perceptions remained unexamined in the pandemic era studies. The purpose of this basic qualitative dissertation was to examine teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD. The conceptual frameworks that underpinned this study were self-determination theory to help understand educational settings and critical multimodal literacy expounding that literacy was not defined only as conventional reading and writing but included drawings, photographs, and role-playing to gain a deep understanding and display learning. Teachers from urban, rural, and suburban areas who instructed children with ASD in Grades K to 5 were invited to participate in semistructured virtual interviews. The findings after completing descriptive and pattern coding showed that the 12 participants perceived the level of support from students' families as an important element of online learning. Some evidence-based practices from the prepandemic era were challenging in an online forum while others were seen as beneficial. Future studies should be done on a larger scale to provide quantitative data. This study may help optimize the use of educational technology during future school closures and add to the existing body of research to improve literacy instruction for students with ASD.

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## Dedication

I dedicate this book to my family and friends who have offered me unconditional love and support throughout my journey. My inspiration for my doctoral study was my children, Henry and Mallory. My children teach me more than I ever thought possible. I could not have done it without each and every one of you.

## Acknowledgments

Thank you to my teaching mentors. Rebecca Riedel was my original mentor when I completed my clinical practice. Rebecca let me experiment and find my way in the classroom. Her guidance and flexibility influenced my teaching philosophy and inspired me to be much like her.

Karen Franko and Sister Judith Wulk scaffolded me as a resident educator in my initial years in the classroom. In those days, I marched to my own drum and they taught me how to be part of the band. The love and words of wisdom from this experience will stay with me forever.

During my transition to higher education, Dr. Rochelle Berndt mentored me every step of the way. She took the time to show me exactly what the doctoral path looked like and encouraged me in my endeavor. Dr. Berndt taught me skills and gave me opportunities I never dreamed of. I would not be where I am today without her.

I would like to thank Dr. Nancy Williams, who spent countless hours reading drafts, edits, and revisions of my dissertation. Dr. Williams was always approachable and willing to spend extra time on Zoom with me. I could not have a better chairperson throughout my dissertation process. Thank you also to Dr. Ellen Scales, my committee member who provided valuable advice and was prompt with her feedback.

Finally, to all the teachers who participated in my study, thank you for your time and assistance. Without you, this research would not be possible.

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## Chapter 1: Introduction to the Study

The COVID-19 pandemic caused schools to close the doors of brick-and-mortar buildings and shift to various platforms. Because there was not an existing body of knowledge about the literacy instruction and materials used for elementary students with autism spectrum disorder (ASD) during the pandemic, an examination of teachers' perceptions was essential. Teachers have offered the most proximal information to prepare for future school closures as well as to improve literacy skills for students with ASD. This study aligned with Walden University's vision for social change by providing research that added to the existing body of literature so future studies may better empower students with ASD with literacy skills. Literacy skills have the capability to improve the likelihood of success in college and careers (Clifton et al., 2017) and reduce limitations on how fully people participate in the workforce, manage healthcare, and function with daily life (Morrow et al., 2019).

Chapter 1 provides foundational and background information, the problem statement, the purpose of the study, the research question, the conceptual frameworks for the study, the nature of the study, definitions relevant to the study, the scope and delimitations, the limitations, the significance, and a summary.

### **Background**

In the United States, one in every 54 students is diagnosed with ASD (The Autism Community in Action [TACA], 2020). Children with ASD learn at a different rate and in a different manner than their typical peers (Centers for Disease Control and Prevention [CDC], 2020; Narvekar, 2020; Webster, 2020). Students with ASD often struggle with

social, emotional, and communication skills (CDC, 2020; Narvekar, 2020; Webster, 2020). Over 40% of children with ASD do not develop fully functional oral speech skills (Autism Speaks, 2020), and the literacy level of students with ASD typically parallels their oral language ability (Davidson et al., 2018; Lanter et al., 2013; Lanter & Watson, 2008). Schools have provided students with ASD a variety of services to support literacy, including communication skills, social skill support, applied behavior analysis, physical therapy, occupational therapy, emotional support, and academic instruction (Stenhoff et al., 2020). During my research, I examined teachers' perceptions about the materials and strategies used to deliver literacy instruction in public schools during the pandemic for students with ASD from suburban, urban, and rural areas in a midwestern state.

The background research for this study indicated that evidence-based practices (EBP) for literacy instruction amongst students with ASD had been examined before the COVID-19 pandemic that began in March of 2020 and that many had high success rates. However, the pandemic caused a shift in learning environments, resulting in a myriad of literacy instructional strategies and materials (Bao et al., 2020; Buckley-Marudas & Rose, 2020). Nevertheless, some teachers continued to use the same materials and strategies in nontraditional ways that were used before the pandemic while others chose to implement new strategies and materials. Research emerging during the COVID-19 era demonstrated the ramifications students with ASD faced, including a loss or regression of literacy skills (Boa et al., 2020), students earning lower grades (Reich et al., 2020), a lack of support services for children with special needs (Waldman et al., 2020), and subpar instruction (Nazerian, 2020). However, teachers' perceptions about the materials and strategies used

to deliver literacy instruction during the pandemic for students with ASD were uncertain. According to my searches of multiple websites and forums (see Chapter 2), there was not an existing body of knowledge about the literacy instruction and materials used for elementary students with ASD during the pandemic, and it was essential to examine the perceptions of teachers, who offered the most proximal information.

Social change may be possible by examining the perceptions of 12 elementary teachers at various stages in their careers about the materials and strategies implemented to deliver literacy instruction during the COVID-19 pandemic. The teachers invited for semistructured, individual interviews all met the following criteria: (a) The teacher instructed children in Grades K to 5, (b) the teacher provided literacy instruction, (c) the teacher was employed by a public school during the pandemic from March 2020 through May 2021, (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD, and (e) the teacher was teaching in a midwestern state during the pandemic. It was imperative to understand the nature of the schooling experiences and to empower students with ASD with successful literacy skills that could improve their communication, life skills, ability to maintain a job, and support independent living.

### **Problem Statement**

The pandemic caused a shift in learning environments, resulting in a myriad of literacy instructional strategies and materials for students (Bao et al., 2020; Buckley-Marudas & Rose, 2020), with some teachers continuing to use the same materials and strategies that were used before the pandemic in nontraditional ways while others implemented new strategies and materials. The problem was that there was not an

existing body of knowledge providing teachers' perceptions about the literacy instruction and materials used for elementary students with ASD during the pandemic. It was essential to examine the perceptions of teachers who offered the most proximal information.

Learners with disabilities, such as ASD, often have depended on schedules, routines, and a familiar learning environment. Therefore, many have suffered repercussions from the shifting educational environments during the pandemic (Narvekar, 2020; Parenteau et al., 2020). Research emerging during the COVID-19 era demonstrated the ramifications students with ASD faced, including a loss or regression of literacy skills (Boa et al., 2020), students earning lower grades (Reich et al., 2020), a lack of support services for children with special needs (Waldman et al., 2020), and subpar instruction (Nazerian, 2020). My study built on emerging research during the pandemic that has come from the vantage points of noneducators. According to my searches through various search engines and forums, there was a gap in research about the target population during the pandemic regarding teachers' perceptions.

Before the pandemic, literacy research concerning students with ASD focused on instructional materials and strategies (Baker et al., 2019; Boyle et al., 2019). In this basic qualitative dissertation, I investigated how teachers perceived the implementation of literacy instructional strategies and materials during the COVID-19 pandemic among elementary students with ASD from urban, rural, and suburban areas of a midwestern state. The gap in practice indicated that teachers' perceptions were absent when examining literacy development during the pandemic era. Some consequences brought



forth in emerging literature from noneducator perceptions indicated that students with ASD were not receiving the supports they had before the pandemic to increase their literacy skills (Patel et al., 2020; Stenhoff et al., 2020) and were suffering from negative impacts on mental and physical health (Neece et al., 2020; Patel et al., 2020; Waldman et al., 2020).

### **Purpose of the Study**

The purpose of this basic qualitative dissertation was to examine teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state. The results from this study add to the broader body of research that could improve literacy instruction for students with ASD and help optimize the use of educational technology and materials in the event of future school closures for the growing autism community and their educators.

### **Research Question**

This basic qualitative study addressed teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state using the central research question below:

Research Question (RQ): How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

## Conceptual Frameworks

Two conceptual frameworks underpinned this study. The first was Deci and Ryan's (1985) self-determination theory (SDT). SDT provided a lens for viewing teacher strategies for autonomy, competence, and relatedness (see Cole & Cole, 1993; Erickson & Fronauf, 2019). SDT is a broad framework for understanding motivation, psychological wellness, and issues of direct relevance to educational settings (Ryan & Deci, 2020). The educational environment can hinder or facilitate self-determination (Deci & Ryan, 2000), that provided a basis for examining the perceptions of teachers during this unprecedented time. Guided by Deci and Ryan's SDT, studies like Howard (2020), Ha et al. (2019), Booker (2018), and Haakma et al. (2018) demonstrated how teachers' perceptions influenced teaching methods and student learning. SDT emphasizes the impact that teachers have on children's education and the ways teachers can support students (Erickson & Fornauf, 2019). Experts have called for future SDT research to look closely at how educational media, e-learning, remote classrooms, and technology-enhanced experiences foster engagement and learning (see Booker, 2018; Peters et al., 2018; Ryan & Rigby, 2020), inspiring me to examine the perceptions of teachers during the shifting learning environment.

The second framework used was critical multimodal literacy. I examined teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state. It was important to understand that literacy was not defined as reading and writing but as prescribed in the conceptual framework of critical multimodal literacy.

This framework emphasizes that students can use multimodal tools, such as drawings, photographs, role-playing, or music to gain deep understandings and display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017). Students with ASD have demonstrated literacy skills in nontraditional ways not recognized as literacy engagement according to narrow conceptualizations (Huang, 2017; Robledo, 2017; Schroeter & Wager, 2017). This was appropriate for this study because the teachers' perceptions illustrated literacy experiences using the modern definition, and it was most common for ASD students to express knowledge through nontraditional modalities. Additional information on these frameworks can be found in Chapter 2.

### **Nature of the Study**

In this study, I used a basic qualitative design. Qualitative studies allow researchers to explore the thoughts or perceptions of participants (Ravitch & Carl, 2016). The basic research structure has been used for obtaining fundamental knowledge and theory (Ravitch & Carl, 2016) and is appropriate for studies prioritizing a person's interpretation of an event as well as how they attribute to the experience (Merriam, 2009). A basic qualitative design has been used when examining the practices, strategies, and techniques of teachers (Worthington, 2013).

SDT and critical multimodal literacy underpinned this study and because both aligned with examining teachers' perceptions of the literacy materials and strategies implemented with elementary students with ASD. Deci and Ryan's (1985) SDT is a broad framework for understanding issues of direct relevance to educational settings (Ryan & Deci, 2020). The educational environment can hinder or facilitate self-determination

(Deci & Ryan, 2000), which provided a basis for examining the perceptions of teachers during this unprecedented time. The second framework, critical multimodal literacy, was necessary for exploring teachers' perceptions of literacy instruction among students with ASD during the pandemic because it was important to understand that literacy is not defined as reading and writing but as prescribed in the conceptual framework of critical multimodal literacy. This framework explained that students could use multimodal tools such as drawings, photographs, role-playing, or music to gain deep understandings and display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017). Students with ASD have traditionally utilized literacy skills in nontraditional ways not recognized as literacy engagement according to narrow conceptualizations (Huang, 2017; Robledo, 2017; Schroeter & Wager, 2017). This framework was appropriate for my study because the teachers' perceptions revealed literacy experiences using the modern definition, and ASD students have commonly expressed knowledge through nontraditional modalities.

I invited 12 teachers from a midwestern state to participate in semistructured interviews using Zoom. Teachers were encouraged to send the invitation to other teachers who met the criteria to participate in my research. Participants were scheduled for a single session, 1-hour interview. Within 3 days of each interview, I used Microsoft Word dictation software to transcribe the audio, and the transcript was analyzed using descriptive coding. The RQ influenced the type of coding. Descriptive coding is typically used when RQs address the perceptions of participants (Saldaña, 2016). Descriptive coding is an elemental method of first cycle coding (Saldaña, 2016). In qualitative studies, the codes are researcher generated and can be used for detecting patterns,

categorizing data, theory construction, and other analytic purposes (Saldaña, 2016). This is often called the “bread and butter” approach because it provides basic, foundational information from a beginning researcher (Saldaña, 2016).

### **Definitions**

For purposes of this research study, the following terms were used:

*Autism spectrum disorder (ASD)*: Autism is a developmental disability that causes significant social, communication, and behavioral challenges. Because autism is a spectrum disorder, the combination of symptoms and their level of severity varies from person to person (TACA, 2020).

*Multimodal literacy*: A deep understanding or display of knowledge. Students can use multimodal tools such as drawings, photographs, role-playing, or music to gain deep understandings and display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017).

### **Assumptions**

In this basic qualitative study, I assumed the elementary teachers interviewed were honest about meeting the required criteria: (a) The teacher instructed children in Grades K to 5, (b) the teacher provided literacy instruction, (c) the teacher was employed by a public school during the pandemic from March 2020 through May 2021, (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD, and (e) the teacher was teaching in a midwestern state during the pandemic. I also assumed the teachers had earned a teaching license or certification. Additionally, I

assumed that each elementary school teacher responded honestly in each semistructured interview.

To preserve confidentiality and as to not offend the participants, documentation or proof of meeting the criteria was not requested. The teacher's word and consent on the confidentiality agreement met the burden of proof needed for this study.

### **Scope and Delimitations**

In this basic qualitative study, I examined teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state. This focus was selected because the future of educational experiences is uncertain. In support of Walden University's vision for social change, I aimed to support the teachers of students with ASD during future school closures, add to the existing body of literacy research, and lead to further studies that will improve literacy instruction for children with ASD. The scope of this study was bound to teachers in public school districts for Grades K to 5. The sample size of this study was limited to 12 teachers. Due to the small sample size of the participants and the use of only one midwestern state, the results may not be generalizable to other academic populations.

In this study, I used critical multimodal literacy as an underpinning framework. Most studies involving literacy during the pandemic used the simple view of reading (see Gough & Tunmer, 1986). I chose to use the critical multimodal literacy framework due to the target population. According to the simple view of reading, two components lead to reading comprehension: word recognition and language comprehension (Gough &

Tunmer, 1986). The simple view of reading defines word recognition as the ability to transform print into a spoken language (Gough & Tunmer, 1986). Forty percent of students with ASD are nonverbal (TACA, 2020) and cannot demonstrate understanding in the same ways as their typical peers. Gough and Tunmer (1986) also defined language comprehension as the ability to understand spoken language. Students with ASD have lower receptive language skills and struggle with meaning-making; therefore, it did not make sense to use this framework for the current study.

I also used SDT (see Deci & Ryan, 1985) as a framework instead of Maslow's (1943) hierarchy of needs. Maslow's (1943) theory was considered because much of the emerging literature during the pandemic called for research of the whole child's needs and addressed the consequences the pandemic had on children with ASD in both the mental and physical domains. Maslow's hierarchy described the importance of self-actualization, esteem, love/belonging, safety, and physiological well-being, but because the focus of my study was on the materials and instruction and not on the child, SDT seemed to be the best choice.

SDT aligned best with the research problem and has guided my study to address issues of direct relevance to educational settings (see Ryan & Deci, 2020). The educational environment can hinder or facilitate self-determination (Deci & Ryan, 2000). That provided a basis for examining the perceptions of teachers during this unprecedented time. Experts have called for future SDT research to look closely at how educational media, e-learning, remote classrooms, and technology-enhanced experiences foster engagement and learning (Booker, 2018; Peters et al., 2018; Ryan & Rigby, 2020).

### **Limitations**

There were some limitations to this research. First, the sample size of the participants was small, with 12 teachers. Also, transferability may be impacted because this research was conducted in a one midwestern state.

There may be personal biases involved because I am an educator. I earned my teaching license in 2009 and have taught in kindergarten through 12th (K-12) grades for seven years. Following my career as a K-12 educator, I began teaching in higher education and continue to do so. This information was divulged to the participants.

The second personal bias was that my 6-year-old son has ASD and was the inspiration for my study. I did not use any participant who has worked with my son. I also disclosed that I have an autistic child before each interview when I introduced myself.

### **Significance**

In this study, I examined teachers' perceptions of the materials and strategies used to develop literacy skills for students with ASD during the pandemic. My study is important because higher literacy achievement is correlated with academic success, gainful employment, and improved quality of life (see Clifton et al., 2017; Davidson, 2021). The perceptions of teachers may help to optimize the use of educational technology and materials during future school closures. The future of educational experiences is uncertain; therefore, it is necessary to understand how teachers perceive literacy instructional strategies and materials for the targeted students. Prior research has been able to illuminate instructional strategies and materials that have been successful in



a traditional setting. However, the pandemic has shifted learning into a myriad of environments. According to thorough searches using multiple forums (see Chapter 2), research was not available from the perceptions of teachers about the literacy instructional strategies and materials used in pandemic era learning environments. However, teachers provide the most proximal information regarding students' learning (Ryan & Deci, 2020). It was essential to understand the way school experiences have fostered literacy development (Robledo, 2017), and this study adds to the existing literacy research by providing information during a unique time, about a specific population, and from teachers' perceptions. Improving literacy instruction for children is liberating. It has the potential to better engagement with the world, relationships with others, and communication (Robledo, 2017), which supports Walden University's vision for social change.

### **Summary**

The goal of this basic qualitative study was to examine teachers' perceptions of the literacy instruction and materials used during the pandemic with elementary students with ASD. I examined the perceptions of 12 teachers from urban, rural, and suburban areas in a midwestern state using semistructured virtual interviews. The findings of this study may help literacy teachers in the event of future closures and add to the broader body of research that can improve literacy instruction for students with ASD. In Chapter 1, I introduced the study, and in Chapter 2 an exhaustive review of the literature about components of the study is provided. Chapter 2 includes the following sections: Literature Search Strategy, Conceptual Frameworks, Background, Development of

Literacy Skills, Prepandemic EBP, Prepandemic Hurdles, Literacy Loss During the Pandemic, Special Education During the Pandemic, Challenges, Recommendations, Autism Community, Silver Linings, and a Summary.

## Chapter 2: Literature Review

The pandemic caused a shift in learning environments, resulting in a myriad of literacy instructional strategies and materials for students (Bao et al., 2020; Buckley-Marudas & Rose, 2020), with some teachers continuing to use the same materials and strategies that were used before the pandemic in nontraditional ways while other teachers implemented new strategies and materials. Research emerging during the COVID-19 era has demonstrated the ramifications students with ASD have faced, including a loss or regression of literacy skills (Boa et al., 2020), students earning lower grades (Reich et al., 2020), a lack of support services for children with special needs (Waldman et al., 2020), and subpar instruction (Nazerian, 2020). However, it was uncertain as to what teachers' perceptions were of the various literacy materials and strategies implemented during the pandemic. According to my searches using multiple platforms, there was no existing body of knowledge about the literacy instruction and materials used for elementary students with ASD during the pandemic, and it was essential to examine the perceptions of teachers who offered the most proximal information. The existing body of literature has requested studies like mine; Kaden (2020) asserted that teachers need to be involved in future research and discussions to provide conditions and support systems that are equitable for all learners, especially vulnerable populations. The American Educator Panel gathered data from educators using surveys to provide a surface-level explanation of educational transformations during the pandemic but cautioned that the data from the surveys should be used in culmination with other qualitative research (as cited in Hamilton et al., 2020).

Learners with disabilities, such as ASD, have often depended on schedules, routines, and a familiar learning environment. Therefore, many have suffered repercussions from the school closures and shift of educational environments during the pandemic (Narvekar, 2020). The purpose of this basic qualitative dissertation was to examine teachers' perceptions of literacy instructional strategies and materials implemented during the COVID-19 pandemic among elementary students with ASD in a midwestern state across urban, rural, and suburban schools. The gap in practice indicated that teachers' perceptions were absent when examining literacy development during the pandemic era. Some consequences brought forth in emerging research from noneducators established that students with ASD did not receive the supports they had before the pandemic to increase their literacy skills (Patel et al., 2020; Stenhoff et al., 2020) and were suffering from negative impacts on mental and physical health (Neece et al., 2020; Patel et al., 2020; Waldman et al., 2020). There is a paucity of data on teachers' perceptions.

The data from this study can help optimize the use of educational technology and materials during future school closures to the growing autism community and their educators. The findings also add to the existing body of literature on literacy instruction to better prepare ASD students with literacy skills.

I begin the chapter with a literature review of the two frameworks that underpinned this study, SDT and critical multimodal literacy. Literature in this chapter also includes background, prepandemic hurdles, prepandemic EBP, literacy loss during

the pandemic, special education during the COVID-19 pandemic, pandemic challenges, the autism community, recommendations, and the silver lining.

### **Literature Search Strategy**

A literature search was conducted using the Walden Library databases and Google Scholar. The Walden Library databases included Academic Search Complete, EBSCO, Education Source, ERIC, SAGE, Thoreau, and ProQuest. Search terms used for both Google Scholar and the Walden database included *literacy, literature, liter\**, *reading, writing, education, instruct\**, *teaching, education, schooling, autism, ASD, autistic, autism spectrum disorder, COVID-19, COVID, pandemic, and 2020*. My primary filter was set for peer-reviewed journals, but I also searched websites such as the World Health Organization, TACA, and the CDC for current policy and background information. Because the most immediate publications during the pandemic came from periodicals, I also used Google as a search engine to examine the most current news related to the topic. The goal of this literature review was to gather the information that could improve literacy for students with ASD during and following the pandemic.

### **Conceptual Frameworks**

The two conceptual frameworks that underpinned this study were Deci and Ryan's (1985) SDT and critical multimodal literacy. SDT provided a lens for viewing teacher strategies for autonomy, competence, and relatedness (Cole & Cole, 1993; Erickson & Fronauf, 2019). SDT is a broad framework for understanding motivation, psychological wellness, and issues of direct relevance to educational settings (Ryan & Deci, 2020). The educational environment can hinder or facilitate self-determination (Deci & Ryan, 2000).

That provided a basis for examining the perceptions of teachers during this unprecedented time. Guided by Deci and Ryan's SDT, studies like Howard (2020), Ha et al. (2019), Booker (2018), and Haakma et al. (2018) demonstrated how teachers' perceptions have influenced teaching methods and student learning. SDT emphasizes the impact that teachers have on childrens' educations and the ways teachers can support students (Erickson & Fornauf, 2019). My study built upon SDT because experts have called for future SDT research to look closely at how educational media, e-learning, remote classrooms, and technology-enhanced experiences foster engagement and learning (Peters et al., 2018; Ryan & Rigby, 2020). SDT demonstrates the critical influence of teachers and the learning environment (Booker, 2018). My study benefitted from this framework because teachers' perceptions are being analyzed along with the influence of the shifting educational environment concerning literacy amongst ASD students.

The second framework that grounded this study was critical multimodal literacy. In this study, I examined teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state. Literacy was not defined as reading and writing but as prescribed in the conceptual framework of critical multimodal literacy. This framework explains that students use multimodal tools such as drawings, photographs, role-playing, or music to gain deep understandings and display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017). Students with ASD have utilized literacy skills in nontraditional ways, not recognized as literacy engagement

according to narrow conceptualizations (Huang, 2017; Robledo, 2017; Schroeter & Wager, 2017). This was appropriate for my study because the teachers interviewed described literacy experiences using the modern definition, and it was most common for ASD students to express knowledge through nontraditional modalities.

### **Literature Review Related to Key Concepts and Variable**

#### **Background**

In the United States, one in every 54 students has been diagnosed with ASD (TACA, 2020). Children with ASD learn at a different rate and in a different manner than their typical peers (CDC, 2020; Narvekar, 2020; Webster, 2020). Students with ASD often struggle with social, emotional, and communication skills (CDC, 2020; Narvekar, 2020; Webster, 2020). Over 40% of children with ASD do not develop fully functional oral speech skills (Autism Speaks, 2020), and the literacy level of students with ASD typically parallels their oral language ability (Davidson et al., 2018; Lanter et al., 2013; Lanter & Watson, 2008). Schools have provided students with ASD a variety of services to support literacy, including communication skills, social skill support, applied behavior analysis, physical therapy, occupational therapy, emotional support, and academic instruction (Stenhoff et al., 2020).

Children with ASD have typically struggled with reading comprehension and meaning-making skills (Kimhi et al., 2018; Westerveld et al., 2017). Teachers and administrators have described literacy instruction for ASD students as inadequate (Clifton et al., 2017; Lanter & Watson, 2008). The No Child Left Behind Act (2001) mandated EBPs for instruction for all children, including those with special needs (No Child Left

Behind, 2002). The Individuals with Disabilities Education Act (2004) requires that students with disabilities are prepared to read, yet teachers and administrators have continued to describe literacy instruction for ASD students as subpar (Clifton et al., 2017).

Literacy is both multimodal and multidimensional, encompassing behavioral, cognitive, motivational, emotional, and social dimensions (Alexander, 2018; Ames, 2018). The critical multimodal literacy framework defined literacy as gaining deep understandings and having the ability to display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017). Literacy skills have the potential to liberate students with ASD, allowing them to engage in the world, make personal connections with others, and enable communication (Robledo, 2017). However, students with ASD have been underserved in literacy education (Clifton et al., 2017; Lanter & Watson, 2008). Research has shown that American students with ASD scored below grade level in reading and writing skills (Baker et al., 2019; Clifton et al., 2017), and oftentimes did not respond to traditional literacy instruction the same way typical peers have (Baker et al., 2019). Students with ASD have experienced many barriers to their literacy development (Robledo, 2017). Researchers have stated that understanding the nature of schooling experiences that maximizes literacy development for students with ASD is essential (Robledo, 2017). This literature review demonstrates the perceptions of teachers as an essential viewpoint that has been unexamined during the targeted time frame.



## **Developing Literacy Skills**

In this section, I describe the stages of reading development for a typically developing child, differences in reading development for ASD students, and reasons reading development is essential. The seminal work created by Chall (1976) depicted literacy development in six stages. In my study, I describe the first four stages because children from Grades K to 5 were the target population.

In Stage 0, Awareness and Exploration of Reading Stage (birth through age 4), children begin to pretend to read books, put names to letters, and read signs from the environment (Indrisano & Chall, 1995). In Stage 1, Initial Reading and Decoding (ages 4 through 6), typically developing children begin to match letters with sounds and can begin to sound out words (Indrisano & Chall, 1995). The second stage, Confirmation and Fluency (ages 7 through 8) is when young readers begin to read familiar stories with fluency (Indrisano & Chall, 1995). In Stage 3, Reading for New Learning (ages 9 through 13), students can independently read to gain new knowledge, perceptions, and attributes (Indrisano & Chall, 1995).

The term emergent literacy was coined to describe all literacy behaviors described in the earliest stages (Clay et al., 2005). During the emergent phase, children begin to develop the skills they will need to be independent readers (Clay et al., 2005). Unlike their typically developing peers, students with ASD vary in the development of emergent skills and do not necessarily follow the stages of reading development (Lanter & Watson, 2008).

Lanter and Watson have conducted extensive research about literacy development for students with ASD (Lanter et al., 2013; Lanter & Watson, 2008). Lanter and Watson (2008) stated that students with ASD often have subpar vocabulary, language, and comprehension skills in the emergent stages. Research has also shown that children with ASD frequently develop high levels of decoding and low levels of comprehension compared to typical peers (Kimhi et al., 2018; Lanter & Watson, 2008; Westerveld et al., 2017). This often contributes to students with ASD having hyperlexia, which has involved superior word decoding skills but inferior comprehension (Davidson, 2021; Lanter & Watson, 2008).

Students with ASD often struggle with meaning-related skills (Davidson, 2021; Westerveld et al., 2017). Students with ASD who have higher language capacity also have higher emergent literacy skills (Lanter et al., 2013). Oral vocabulary is the number one predictor of reading achievement for students with ASD (Davidson et al, 2018). The struggle in comprehension skills is mostly attributed to language impairments (Davidson, 2021). My study was important because higher literacy achievement correlates with academic success, gainful employment, and improved quality of life (see Clifton et al., 2017; Davidson, 2021).

The paradigm shift caused by the pandemic may have changed education in ways that have yet to be determined (Kaden, 2020). In this study, I examined teachers' perceptions of literacy instruction and materials used in Grades K to 5. Students in these grades typically range from emergent to conventional readers. The study was essential because there are many students with ASD who have struggled to develop successful

literacy skills. The current study adds to the body of research examining literacy education for students with ASD and may provide a foundation for further research to improve literacy experiences for students with ASD.

### **Prepandemic EBP**

Before the pandemic began, researchers demonstrated effective techniques to facilitate growth in emergent literacy skills for students with ASD. The strategies to support emergent reading skills for children with ASD included using shared reading (D'Agostino et al, 2018; Fleury et al., 2021; Kimhi et al., 2018; Wicks et al., 2020), story retelling (Kimhi et al., 2018; Stirling et al., 2017), dialogic reading (DR) (Coogle et al., 2018; Finke et al., 2017; ; Izreal, 2017; Kimhi et al., 2018), providing authentic opportunities to include literacy (Brozo, 2017; Hughes et al., 2014; Lanter & Watson, 2008), using visual supports (Finnegan & Accardo, 2018; Izreal, 2017; Kimhi et al., 2018; Morrow et al., 2019; Robledo, 2017), performing think-alouds (Brozo, 2017; Caroil & Peru, 2019; Lanter & Watson, 2008; Nicholson et al., 2021), narrative writing (Hilvert et al., 2020; Zajic et al, 2020a; Zajic et al., 2020b), task analysis (TA) (Baker et al., 2019; Blair et al., 2018), and reading aloud (Brozo, 2017; Cravalho et al., 2020, Kimhi et al., 2018). The same strategies used to support emergent readers with ASD have also been recommended for those in the conventional reading stage (Lanter & Watson, 2008).

During the conventional stage of reading, students interpret meaning from text (Lanter & Watson, 2008). In addition to the suggestions for emergent readers, those in the conventional phase have benefited from the teacher supporting phonological

awareness, using computer software to manipulate words and sounds, and having frequent dialogues with children (Kimhi et al., 2018).

### ***Shared Reading***

Shared reading was considered an EBP emergent literacy technique; in this strategy, an adult reads orally with a child while allowing the child to participate in various ways (D'Agostino et al, 2018; Fleury et al., 2021; Kimhi et al., 2018). The interaction facilitates learning the concepts of print and supports language and literacy development (Fleury et al., 202; Kimhi et al., 2018). Frequently, shared reading activities include asking questions, finger-pointing, and having the child recite familiar parts (Fleury et al., 2021; Kimhi et al., 2018). Through shared reading experiences, students with ASD develop social commenting skills when these behaviors are systematically taught and reinforced (D'Agostino et al., 2018).

It has been suggested that performing shared readings with students with ASD is enhanced by focusing on the quality of the session and not the quantity of time (Fleury et al., 2021). During shared reading, the visual attention of a child with ASD is not related to their emergent literacy skills (Wicks et al., 2020). Students with ASD benefit from knowing the goal of the session, having an organized and established reading environment, and gradually building the joint attention period (Fleury et al., 2021). While shared reading is usually done individually with ASD students, children could participate in this method as a group.

### ***Story Retelling***

The strategy of story retelling was helpful to develop meaning-related skills among students with ASD before the COVID-19 era began (Kimhi et al., 2018; Stirling et al., 2017). Students with ASD have retold the story by drawing a picture of the story, interacting with visual aids to reenact or retell the main ideas of the storyline, or orally retold events from the story (Kimhi et al., 2018). Although students with ASD usually had shorter and less grammatically correct retells, story retelling was an effective strategy with ASD students for assessing comprehension and fostering creativity (Stirling et al., 2017).

### ***Dialogic Reading***

Before the pandemic began, DR was an EBP type of shared reading intervention with evidence of significant vocabulary growth and improvements in expressive language among students with ASD (Coogle et al., 2018). During DR, the child played an active role by answering five types of questions represented by the acronym CROWD: completion, recall, open-ended, “wh”, and distancing (Coogle et al., 2018). Throughout the reading experience, the PEER (prompt, evaluate, expand, and repeat) system was used and the reader prompted the child for a vocabulary word, evaluated if their response was accurate, expanded on the response by providing more detail, and asked the child to repeat the target word or expansion (Coogle et al., 2018). This strategy worked best if the child with ASD could choose a storybook to read (Finke et al., 2017; Izreal, 2017).

DR was effective for children with ASD when using either traditional paper or electronic texts (Coogle et al., 2018). If a student used an augmentative and alternative communication (AAC) device, before beginning to read the book, it has been

recommended that the teacher review all the vocabularies on the AAC device display for that specific storybook with the child (Finke et al., 2017). During the DR, there needed to be a conversation before reading, during the story, and after it was completed (Finke et al., 2017; Kimhi et al., 2018). Students with ASD were able to communicate via any symbolic mode such as using an AAC device, iPad, signs, gestures, low-technology communication book, or any modality of comfort. This strategy was used in both individual settings and with groups (Finke et al., 2017; Kimhi et al., 2018).

### ***Visual Aids and Materials***

Recommendations for working with students with ASD in a literacy classroom before the pandemic included using visuals for labels, schedules, and directions (Robledo, 2017). It was also suggested to use materials connected to students' interests (Lanter & Watson, 2008; Izreal, 2017; Webster, 2020) and allow students with limited language to use their AAC device to participate in literacy activities (Lanter & Watson, 2008; Robledo, 2017). Labeling classroom items has been helpful for students with ASD (Izreal, 2017). The TEACCH work system, that relied heavily on visuals, has been successful in literacy development for many ASD students (Izreal, 2017). The TEACCH work system incorporates visual schedules, the first/then system, and the use of an AAC device (Izreal, 2017). Research has suggested providing sensory supports such as calming strategies, fidgets, and sensory activities for students with ASD (Cravalho et al., 2020; Robledo, 2017).

Higher levels of retention were achieved when using texts with high amounts of images and illustrations among children with ASD (Morrow et al., 2019). Graphic

organizers helped children with ASD of any age with comprehension (Finnegan & Accardo, 2018; Morrow et al., 2019). Some graphic organizers that have been successful for students with ASD include story maps for understanding characters and plot and character event maps to support inferencing development (Finnegan & Accardo, 2018).

### ***Narrative Writing***

Students with ASD had difficulty with writing in comparison with their typically developing peers (Hilvert et al., 2020; Zajic et al., 2020b), especially in the domains of handwriting, text organization, and overall quality (Zajic et al., 2020b). Children with ASD benefitted from writing about their own experiences and supported schema activation while increasing their understanding that writing served a functional purpose (Lanter & Watson, 2008). This task was supported by using a story outline, pictures, or artifacts from personal experiences (Lanter & Watson, 2008). Planning behaviors, concepts of print, and sequencing were emphasized to improve writing skills among ASD students (Zajic et al., 2020a). Students with ASD benefitted from having multiple writing utensils available for all sensory needs and allowing for other modes of communication like pictures, magnet letters, or word stickers (Lanter & Watson, 2008).

### ***Authentic Literacy***

Authentic literacy was described as providing reading and writing activities that are functional or in the natural context (Hughes et al., 2014; Lanter & Watson, 2008). Students learned more when they were interested and motivated (Brozo, 2017). Some examples of authentic literacy opportunities included providing the lyrics when singing songs or using a cookbook to make a recipe. Enjoyable reading was also considered

authentic reading. It was recommended to make use of comic books, blogs, graphic novels, magazines, newspapers, and other forms of pleasure reading modalities (Brozo, 2017; Hughes et al., 2014). Students with disabilities appreciated the nonconfrontational forum of independent reading (Hughes et al., 2014).

### ***Think-Aloud***

Before the pandemic, think-alouds were used to develop metacognition (Nicholson et al., 2021). Metacognition was essential for daily living; when students were trained to use the think-aloud strategy, they could become self-regulated readers (Caroili & Peru, 2019). During the COVID-19 pandemic, many students began learning online. Digital learning required a different set of skills than those involved in traditional reading. Using the think-aloud strategy had proven to increase self-monitoring, reading comprehension, and digital proficiencies (Caroili & Peru, 2019).

### ***Task Analysis***

TA has proven to be an EBP to teach literacy (Baker et al., 2019). Using TA when teaching literacy to students with ASD provided structure (Baker et al., 2019), and used verbal, textual, or physical prompting in combination with behavioral chaining (Blair et al., 2018). Steps in TA varied but Baker et al., 2019 suggested this six-step approach: determine the targeted behavior, organize the tasks involved leading up to the targeted behavior, consider the instructional presentation, determine the prompting techniques, pilot and update the tasks, and then teach while collecting data.

### ***Interest Inventories***



Before the pandemic of 2020, Izreal (2017) wrote an autoethnography suggesting a strategy she found effective for teaching literacy skills to students with ASD. Izreal, a special needs instructor, said interest inventories exposed students' motivators and helped in developing a picture exchange communication system (Izreal, 2017). Brozo (2017) suggested using not only topics of interest in the inventory such as sports, dinosaurs, dancing, and music, but also the preferred methods of learning such as trade books, videos, lectures, computer-based programs, and hands-on learning. Interest inventories have paved the way for generating student interest and motivating students to read.

### ***Teacher Read-Aloud***

A teacher's read-aloud can be a powerful tool for modeling fluency (Kimhi et al., 2018). Students with ASD advanced from having materials to follow along with and allowing for movement so they were not seated in one position for extended amounts of time (Kimhi et al., 2018). It was also beneficial for students to highlight words of interest in reading materials and to let the students manipulate an object related to the text, like a toy car, soldier, or planet (Cravalho et al., 2020). It was recommended to give the ASD student a job during the read-aloud like clicking the next slide or turning the pages, and teachers should provide explicit vocabulary instruction, conduct repeated readings with sentence-level comprehension, foster question and answering relationships, and summarize main ideas (Cravahlho et al., 2020).

### ***Inclusion***

Teachers in the United States said that having fully integrated classrooms benefitted students with ASD and their peers (Kozleski et al., 2020; Low et al., 2020).

Early literacy skills developed better for most ASD students in the general education setting (Kozleski et al., 2020). Having students with ASD in the general education classroom heightened autism awareness and built diverse peer relationships (Kozleski et al., 2020; Low et al., 2020). Teachers benefitted from learning to be more flexible and creative in lesson planning (Farrell, 2019). Suggested strategies to assist teachers to include ASD students in their classrooms included: designing and implementing individualized supports and services for students and families, creating a structured learning environment, differentiating the curriculum, planning for an approach to manage difficult behaviors, communicating with the families, and coordinating with the team (Farrell, 2019).

The materials and strategies that scaffolded the students with ASD were also helpful for their typical peers (Farrell, 2020). Literacy materials such as graphic organizers, timelines, lists, and diagrams have shown positive results for the whole class (Farrell, 2020). It was recommended that teachers collaborate, learn about ASD, and know the child's needs to best support the student (Sawchuck, 2019). Inclusion is not for all children with ASD. Inclusion is recommended for cases that the benefits exceed the stressors (Sawchuck, 2019).

### ***Summary of EBP***

The discussion among publications before the pandemic emphasized the EBPs described in this chapter. Some of the literacy materials and strategies discussed in Chapter 2 have also discoursed in the teacher interviews I have conducted. Some of the perceptions showed that the EBP that worked for the teacher in the past had continued to

be successful in an online or hybrid environment. Other teachers indicated that the shift in educational environments no longer facilitated the use of past practices. All the EBPs in this chapter were materials and strategies supported by the definition of critical multimodal literacy.

### **Prepandemic Hurdles**

Students with ASD have been stereotyped as incapable of developing literacy skills (Robledo, 2017). In turn, instructors often focused on life skills for students with ASD and removed literacy activities from the priorities in their lessons (Robledo, 2017). Because students with ASD demonstrated knowledge in atypical ways, many proficiencies were not recognized by teachers who had narrow definitions of literacy (Robledo, 2017). The greatest hurdle may have been that many teachers reported they were unaware of the literacy needs of students with ASD and how to support those needs (Robledo, 2017) When surveyed, most teachers could not provide examples of EBP for literacy instruction amongst students with ASD (Clifton et al., 2017). Through SDT, we were aware the teacher has a large impact on student learning (Deci & Ryan, 1985).

Before the pandemic, perceptions of teachers indicated that legal regulations hindered literacy instruction for ASD students (Clifton et al., 2017). Teachers also perceived families as having limited interest in literacy instruction for their child with ASD (Clifton et al., 2017).

### **Literacy Loss During the Pandemic**

This section illustrates the gap in practice and demonstrates the need for my study. Learners with disabilities, such as autism, have depended on schedules, routines,

and a familiar learning environment and have suffered great impacts from the shift of educational environments during the pandemic (Narvekar, 2020; Parenteau et al., 2020). The World Health Organization (2020) reported that children with disabilities, such as autism, were more vulnerable to pandemic effects due to the challenges of social distancing, disrupted support services, and preexisting health conditions. Studies showed that students with disabilities had families that showed higher levels of stress, more challenges with negative behavior, and burnout during the pandemic (Fontanesi et al., 2020; Neece et al., 2020).

A quantitative study (Boa et al., 2020) showed that kindergarten students who had no formal education during the pandemic lost up to 67% of their literacy abilities. Activities that could have mitigated the loss, such as attending summer school, visiting the library, and attending literacy-based out-of-school experiences were unavailable during the pandemic (Bao et al., 2020).

By April 6, 2020, all 50 states had mandated closures of the public-school system and there were no preestablished federal mandates establishing guidelines for a pandemic or national emergency (Jameson et al., 2020). During the pandemic, a federal mandate stated that if a child does not receive services during the closure, the IEP team must decide if makeup services are warranted (Jameson et al., 2020). Some education agencies used this guidance to eliminate providing instruction and supports to students with disabilities, including those with ASD, during the school closures (Jameson et al., 2020).

Federal agencies researched the emergency plans for students with disabilities and reported significant gaps (Waldman et al., 2020). The gaps did not address how to meet

the needs of disabled students before, during, and after the emergency (Waldman et al., 2020). Several court cases emerged during this time due to insufficient services provided by school districts to students with ASD (Jameson et al., 2020). Ultimately, it was decided that local education agencies were required to support all students, and the most intensive need students required in-person instruction according to Free and Public Education (FAPE, 1996) (Jameson et al., 2020). FAPE must be in accordance with a child's IEP according to Federal and State law (Prior, 2020). The Department of Education had not relieved any obligations covered by the Individuals with Disabilities Act (Prior, 2020).

### **Special Education During the COVID-19 Pandemic**

There was a paucity of literature providing perceptions about literacy instruction specific to ASD students, but research was emerging about special needs education during the pandemic that can be applied. Not only was there a gap in research from the point of view of the teachers of ASD students, but the few studies available relied on surveys. My study examined the perceptions of teachers by using individual interviews. It should also be noted that the existing literature usually applied to learning experiences in general and did not focus on the literacy aspect.

SDT demonstrated that teachers' perceptions influenced teaching methods and student learning (Booker, 2018; Ha et al., 2019; Haakma et al., 2018; Howard, 2020). SDT emphasized the impact that teachers had on children's education and the ways teachers supported students (Erickson & Fornauf, 2019). Experts have called for future SDT research to look closely at how educational media, e-learning, remote classrooms,

and technology-enhanced experiences foster engagement and learning (Booker, 2018; Peters et al., 2018; Ryan & Rigby, 2020): Therefore, it was necessary to examine the perceptions of teachers. In this section, I have compiled an exhaustive body of research to demonstrate the current perceptions of teachers about teaching during the pandemic. As stated, there was a paucity in research from the vantage point of literacy teachers who worked with students with ASD.

### ***Preparation and Delivery***

Surveyed teachers stated they had to learn new technologies and create new lesson plans when shifting to an online forum (Kaden, 2020; Smith et al., 2020). Virtual instruction did not allow teachers to have perpetual access to materials, curricula, nor make on-the-spot changes; the teachers had to commit ahead of time to the materials they would need in the lesson plan (Stenhoff et al., 2020). Teachers said that impromptu adjustments were needed when teaching students with ASD (Stenhoff et al., 2020). It was also difficult for teachers of children with ASD to shift the responsibility of instructional delivery to the caregivers (Stenhoff et al., 2020). Teachers needed to assist caregivers in implementing the behavior intervention plan (BIP) at home. The existing BIPs did not consider the home environment (Stenhoff et al., 2020).

During school closures, some teachers had underestimated the new workload while overestimating the amount of content that could be covered in the shortened instructional time (Kaden, 2020). Sufficient time was not allotted for planning digital lessons nor learning pedagogy to be ready to teach online, and there were no equal alternatives to hands-on experiences like labs (Kaden, 2020; Narvekar, 2020). Teachers

also said they were unable to make the personal connections they had in the face-to-face setting (Nazerian, 2020).

### ***Student Motivation Declines***

According to teachers, it came as a surprise that it was difficult to gain and maintain the engagement of students using a digital platform (Kaden, 2020; Khoo, 2020; Narvekar, 2020; Smith, 2020). Some students were truant when using the online forum, and the home situations of some children were concerning (Nazerian, 2020). Some homeless and transient students could not be reached during the shutdown (Kaden, 2020). Young learners could not be expected to participate in remote instruction for the duration of time they could spend in a traditional school setting causing the content to be delivered less thoroughly (Kaden, 2020). Some teachers reported requiring an increase in the amount of independent learning time (Reich et al., 2020).

### ***Challenges With the IEP Process***

Creating, implementing, and meeting Individualized Education Programs (IEPs) through a digital forum was exigent (Smith, 2020; Tremmel et al., 2020). Individualized instruction and meeting the IEP goals were impossible for some teachers (Tremmel et al., 2020). Eligibility became problematic because limited data were able to be gathered during the pandemic (Tremmel et al., 2020). Collecting data was more time-consuming for teachers who were not in their brick-and-mortar settings (Stenhoff et al., 2020).

Literacy instruction was especially difficult because beginning readers benefit from having individualized attention examining letters, words, and sounds (Nazerian, 2020). Prompting students through a digital forum was more challenging because the use

of proximity or making eye contact with the child could not be done (Stenhoff et al., 2020). Wearing masks increased the difficulty of phonics instruction because it was difficult to see the child's mouth formation (Nazerian, 2020).

### ***Surveyed Teachers Discuss the Shifting Environment***

Only 12% of teachers said they covered the same amount of curriculum they would have in their brick-and-mortar environments (Hamilton et al., 2020). Teachers also raised concerns about equity because of the digital divide (Hamilton et al., 2020). The difficulty of keeping students engaged, providing opportunities for hands-on learning, and supporting social-emotional needs (Hamilton et al., 2020; Kaden, 2020; Narvekar, 2020).

Principals expressed concern about equitable instruction for students, financial constraints, a lack of materials, and issues of privacy (Hamilton et al., 2020). Some of the additional supports requested from principals included internet, technology, and online materials to support distance learning (Hamilton et al., 2020). Principals also requested that some of the proverbial red tapes be lifted during this time pertaining to attendance, communication guidelines, and fraternization policies (Hamilton et al., 2020). Principals expressed the importance of bettering access to counselors and support staff, especially for students at risk (Hamilton et al., 2020). Much of the emerging research indicated the importance of shifting attention to the whole child (Berry, 2020).

## **Challenges**

### ***Virtual Challenges***



The most documented problem families faced during school closures was the digital divide (Berry, 2020; Khoo, 2020; Narvekar, 2020; Rayner, 2020; Reich et al., 2020; Smith, 2020; Stenhoff et al., 2020; Tremmel et al., 2020). Families also discussed the hurdles of adjusting to a virtual environment (Rayner, 2020; Smith, 2020), following a schedule (Rayner, 2020; Smith, 2020), and the reduced interaction with others (Rayner, 2020; Smith, 2020). The shift to an online forum for special needs students with various disabilities posed unique implications depending on the intensity and needs of the child (Smith, 2020). Students also reported waiting longer for feedback from instructors (Rayner, 2020).

Consequences for students when using an online forum included an increased likelihood to earn failing grades and lower performance levels compared to traditional face-to-face instruction (Reich et al., 2020). Many families had little or no experience with delivering instruction to their children with ASD, and it was very difficult to provide a consistent academic schedule or home routine when school buildings were closed (Stenhoff et al., 2020; Parenteau et al., 2020).

### ***Respite and Other Services***

Members of the autism community said that the pandemic era was especially challenging because there was no warning that the routine would be disrupted (Neece, 2020; Patel et al., 2020; Parenteau et al., 2020). People with ASD had difficulties adjusting to new sanitization rituals, wearing masks, and being homebound (Patel et al., 2020). Mental health issues such as anxiety and depression affected more than one in five people with ASD, and experts believed COVID-19 has amplified the need for mental

health support of the targeted population (Patel et al., 2020). Other common concerns are the burdens placed upon caregivers and the lack of support services (Patel et al., 2020).

Families reported the difficulties of being homebound, the lack of childcare, changes in routine, challenges with emotional support, boredom, and worry of contracting COVID-19 (Neece et al., 2020). The loss of services for families was reported by almost 80% of them (Neece et al., 2020). Children were isolated when school buildings closed, and this prevented them from accessing their social worker, peers, teachers, and others who could protect these vulnerable students from neglect and abuse (Waldman et al., 2020). Closing the physical school buildings eliminated the safe space many children with intellectual disabilities, such as autism, relied on (Waldman et al., 2020).

### ***The Unknown***

Families struggled to explain the COVID-19 virus and its effects on the world to children with ASD (Parenteau et al., 2020). Families did not want to cause their children extra anxiety but wanted the student to be prepared for the differences in the environment like wearing masks, social distancing, and not being able to attend a school or social event (Parenteau et al., 2020).

Families expressed apprehensiveness about the long-term impacts of the pandemic (Neece et al., 2020), because children with disabilities are at higher risk for exposure, complications, and death caused by infectious diseases such as COVID-19 (Waldmen et al., 2020). Limited literacy skills among the autism community have presented additional challenges in their lives such as low employment, limited college

participation numbers, struggles to manage healthcare, low financial literacy, and other challenges with daily life (Clifton et al., 2017; Morrow et al., 2019), and there is no indication of how the pandemic will contribute to the child's future.

### **Recommendations**

The following section provides insight into recommended practices based on the two guiding frameworks for this study: SDT and critical multimodal literacy. Other recommendations were built upon the requests of teachers, families, students, and other members of the autism community.

#### ***SDT***

A common difficulty mentioned in several research studies in my literature review was student motivation. A framework of the current study, SDT, showed that supporting students' needs of competence, autonomy, and relatedness increased students' motivation and engagement (Cole & Cole, 1993; Erickson & Fronauf, 2019; Haakma et al., 2018; Deci & Ryan, 1985). The level of teacher support had a critical influence on students' engagement in the classroom (Deci & Ryan, 1985; Haakma et al., 2018).

Teachers can scaffold competency by providing clear guidelines, expectations, and feedback (Haakma et al., 2018). Autonomy can be fostered by offering self-initiative opportunities and choices based on learners' needs and values (Haakma et al., 2018). Involvement begins by creating a collaborative and safe classroom environment (Haakma et al., 2018). SDT researchers explain, once these needs have been met students were more motivated to engage in learning tasks (Cole & Cole, 1993; Deci & Ryan, 1985; Erickson & Fronauf, 2019; Haakma et al., 2018).

### ***Technology and Training***

Professional Development and preservice teacher training have been requested in the areas of socio-emotional learning, relationship building, collegiality, collaboration, technology, and internet safety (Kaden, 2020; Smith, 2020; Tremmel et al., 2020). Families and teachers have asked for administrators to contemplate the technology access for students and then consider using nondigital activities, public television, and strategies that do not require the internet or devices (Smith, 2020). Other suggestions included providing universal internet for all students (Berry, 2020) and providing daily technology support time for teachers and students (Kaden, 2020).

### ***Communication and Collaboration***

Not all students received the same level of support at home and members of the school and community should have checked on each child's well-being (Kaden, 2020). The community and partnerships served as a vital resource during this unprecedented time in education (Tremmel et al., 2020). Ensuring all information was accessible to students and families while brick-and-mortar buildings were not open was challenging. However, it was important to acknowledge that materials needed to be translated for non-English speaking families and finding ways to communicate with those who lack technology was imperative (Kaden, 2020; Tremmel et al., 2020). Phone calls were made to students who were not able to connect to the digital classroom (Nazerian, 2020). Understanding the needs of students and families and using data-driven-decision making improved instruction (Jameson et al., 2020)

Networking with colleagues was perceived as one of the most helpful strategies to get teachers through the pandemic (Kaden, 2020). Collaboration among teachers throughout the states could result in the creation of shared schedules, lessons, and materials (Reich et al., 2020). Short and simple lessons were better for younger learners (Nazerian, 2020). Many games could be adapted and shared among teachers for online learning such as Pictionary, Charades, scavenger hunts, and literacy games (Nazerian, 2020).

### ***Reading Daily and Using EBP***

Improving literacy skills with ASD students may be done using prepandemic EBP and by using recommended practices from experts that have emerged during the pandemic. Prepandemic research showed that using visual aids, language supports, differentiated materials, and a variety of EBP instructional strategies can mitigate the loss of literacy skills (Kimhi et al., 2018). Some EBPs included shared reading (D'Agostino et al., 2018; Fleury et al., 2021; Kimhi et al., 2018; Wicks et al., 2020), joint writing activities (Kimhi et al., 2018), circle time story discussions (Kimhi et al., 2018), literacy games (Kimhi et al., 2018), read-alouds (Cravalho et al., 2020; Kimhi et al., 2018), DR (Coogle et al., 2018; Kimhi et al., 2018; Finke et al., 2017; Izreal, 2017), reenactments (Kimhi et al., 2018), story retells (Kimhi et al., 2018; Stirling et al., 2017), the use of art (Kimhi et al., 2018), and access to reading materials during free time (Kimhi et al., 2018). These activities can help students with ASD to improve code-related and meaning-related skill sets (Kimhi et al., 2018).

Emerging research suggested using a document camera to show students the words as they are read to them online. It was also recommended that students use dry erase or magnet boards on camera for formative assessment of phonics skills (Nazerian, 2020). Nazerian (2020) voiced that choral reading could bring the social aspect to the online experience. Suggested materials for writing in a digital environment included initiating a pen pal program, journaling, and using Google Docs (Nazerian, 2020). A smartphone can be used to photograph a child's writing and help a teacher provide feedback to scaffold the student (Nazerian, 2020). It was also important to make sure students had access to books, keeping in mind that libraries may have been closed due to the pandemic (Bao et al., 2020; Nazerian, 2020).

Reading daily with an adult reduced the loss of literacy skills by approximately 10% (Bao et al., 2020). Using students' interests in the curriculum and offering choices in assignments were motivating for learners (Kaden, 2020, Brozo, 2017). Students' self-efficacy was raised when publishing pictures or videos of students' work (Kaden, 2020).

### ***Family Involvement for Students With Disabilities***

Prior (2020) said that families must know the rights of the student and what to do if the student's needs are not met. Families should have documented the times when the student's needs were not being addressed (Prior, 2020). In extreme cases, it was recommended families pursue legal action if the school district did not comply with the needs of the child (Prior, 2020). State education agencies were required to keep equity at the focal point of remote instruction and provide increased guidance for special populations (Reich et al., 2020). State agencies also needed to provide more thorough

training and communication to address the obstacles faced with home instruction and distance learning (Reich et al., 2020). It was suggested that states offer additional educational opportunities in the summer and subsequent school years (Reich et al., 2020).

Researchers stated that asynchronous instruction may be beneficial in comparison with synchronous digital learning (Reich et al., 2020). When learning was done at home, it was helpful for families to create a separate place in the home for learning (Parenteau et al., 2020). It was important for families to create a consistent location for home instruction to take place, with minimal distractions, and use timers or schedules when needed (Stenhoff et al., 2020).

Researchers, during the pandemic, suggested that teachers should work closely with caregivers and speak using laypersons' terminology (Stenhoff et al., 2020). It was also recommended to use different digital prompts such as pointers, enlarged cursors, highlighting tools, picture cues, and visually or audio stimulating materials to help engage students (Stenhoff et al., 2020). Students also reported that interactive questioning tools have been helpful such as Kahoot, Zeetigs, Boom Cards, and Quizlet (Stenhoff et al., 2020). Other suggested resources included social stories and educational video games (Parenteau et al., 2020).

Five tips to help with at-home instruction for children with ASD were to first create a homework plan (Webster, 2020). The plan should be cocreated between the teacher and caregiver and include the needs in a prioritized fashion (Webster, 2020). The second suggestion reminded caregivers to utilize the student's special interests during instruction time (Webster, 2020; Izreal, 2017; Lanter & Watson, 2008). Many researchers

have said that materials such as Legos or topics like dinosaurs can be incorporated into the lessons to make them more engaging for the student while lessening their anxiety (Izreal, 2017; Lanter & Watson, 2008; Webster, 2020). Using technology to create schedules, checklists, language cards, and provide instruction was the third tip (Stenhoff et al., 2020; Webster, 2020). Another recommendation was to find ways to connect the child with class peers (Webster, 2020). Connections among peers can be done through digital forums like Google Hangouts or online games (Webster, 2020). Finally, families must know they were not expected to do everything the teacher would have done in school and parents were encouraged to connect with other parents (Webster, 2020).

### **The Autism Community**

Temple Grandin, one of the most well-known spokespersons in the ASD community, said that families with young children with ASD needed teachers to coach the families on supporting the student with digital learning (Grandin & Edelson, 2020). Grandin also said that teachers and families must realize that what works for one child may not work for another (Grandin & Edelson, 2020). The members of the autism community have expressed gratitude for the outpouring of support they received from those who were willing to connect with the kids by sharing talents, giving words of encouragement, and offering assistance (Khoo, 2020). While other members of the autism community reported feeling isolated and forgotten during the pandemic (Patel et al., 2020).



## **The Silver Lining**

It takes a global community to teach a child, and people united to support education for all children during these unforeseen times (Berry, 2020; Khoo, 2020; Neece et al., 2020). Teachers communicated with others to form a global education community (Khoo, 2020). Teachers saw an increase in family engagement in education (Berry, 2020). Educational technology improved and became more widely available; exploring these new modalities of learning was viewed as beneficial to educational advancement (Berry, 2020; Khoo, 2020). During the pandemic, more teachers had been implementing universal design for learning strategies in their instruction (Rayner, 2020).

The priority of standardized testing shifted to focusing on the whole child and teachers were not being scrutinized for scores (Berry, 2020). A closer look had been taken at the students' academic, social, emotional, and physical needs (Berry, 2020). With the focus diverted from high-stakes testing, teachers stated that they had been creative, student-centered, and offered more opportunities for student leadership (Berry, 2020). An online gathering space for teachers of all grade levels and content areas has been established online for resources, advice, and unification of teachers during this unprecedented time (Buckley-Marudas & Rose, 2020). One teacher said that teaching online allowed him to better include students' interests into the curriculum and differentiate to meet students' needs (Kaden, 2020).

Families of students with ASD said that one benefit from the school closures was they felt more aware of their child's educational needs (Khoo, 2020). Families said that they had been learning strategies to teach their children and felt more connected (Khoo,

2020). Some students with ASD were responding better to digital instruction than they had been in the traditional classrooms (Khoo, 2020); this may have been because many students with ASD were motivated by the sound and movement on the screen (Khoo, 2020). Eye contact had increased for some students with ASD after they were left the busy classroom environments (Khoo, 2020).

Many families appreciated the increase in time spent together caused by the pandemic (Kaden, 2020; Neece et al., 2020; Rayner, 2020). Some parents said their children made academic gains during the shutdown (Neece et al., 2020). Other perks reported by families included an increase in sleep, a slower pace of life, more time for outdoor activities, and growth in reflection time (Neece et al., 2020). Students who were once bullied in school or did not enjoy being around peers enjoyed staying at home (Kaden, 2020).

A few students have described the new educational forums as liberating (Rayner, 2020). Some children benefitted from the digital access to materials, the ability to replay the instruction if needed, elimination of transitioning, and reduction in stressful social engagements (Rayner, 2020). Other highlights according to students included a new appreciation for teachers, the enjoyment of being at home, and growth in responsibility (Kaden, 2020).

Some schools were showing an upsurge in appreciation for physical activity and the arts (Reich et al., 2020). The National Standards for Quality Online Teaching that were developed in 2011, identifying the knowledge and skills needed in a K-12 online

classroom to promote active and engaged learning, were being used more than in the past (Smith et al., 2020).

The silver linings included the unification of teachers and the autism community, advancements in curriculum and technology, families becoming closer, and learning students' needs. The autism community has reported many silver linings in home and school life.

### **Summary and Conclusions**

This literature review demonstrated the need for the proposed study by demonstrating the importance of examining teachers' perceptions of the literacy materials and instructional strategies provided for elementary students with ASD during the pandemic. The gap in practice indicated teachers' perceptions were absent when examining literacy development during the pandemic era. Some consequences brought forth in research demonstrated students with ASD were not receiving the supports they had before the pandemic to increase their literacy skills (Patel et al., 2020; Stenhoff et al., 2020) and were suffering negative impacts on mental and physical health (Neece et al., 2020; Patel et al., 2020; Waldman et al., 2020). Prepandemic research illuminated the need for developing meaning-related skills for ASD students through EBPs. These EBPs included materials and strategies such as TA, think-aloud, read-aloud, DR, shared reading, and using an inclusion setting. It was unknown as to what teachers' perceptions were of the materials and literacy instruction during the pandemic.

### Chapter 3: Research Method

The shift of learning environments during the pandemic has resulted in a myriad of literacy instructional strategies and materials for ASD students (Bao et al., 2020; Buckley-Marudas & Rose, 2020). Existing literature came from noneducator viewpoints during the COVID-19 era and demonstrated the ramifications students with ASD faced. The ramifications included a loss or regression of literacy skills (Boa et al., 2020), students earning lower grades (Reich et al., 2020), a lack of support services for children with special needs (Waldman et al., 2020), and subpar instruction (Nazerian, 2020). The pandemic caused a shift in learning environments, resulting in a myriad of literacy instructional strategies and materials for students (Bao et al., 2020; Buckley-Marudas & Rose, 2020), with some teachers continuing to use the same materials and strategies that were used before the pandemic in nontraditional ways while others implemented new strategies and materials. The problem was that there was not an existing body of knowledge providing teachers' perceptions about the literacy instruction and materials used for elementary students with ASD during the pandemic. It was essential to examine the perceptions of teachers who offered the most proximal information.

I used various search engines and explored available research regarding literacy instruction with ASD students during the pandemic and did not find any data from teachers' viewpoints. The search was conducted using the Walden Library databases and Google Scholar. The Walden Library databases included Academic Search Complete, EBSCO, Education Source, ERIC, SAGE, Thoreau, and ProQuest. The purpose of this basic qualitative study was to investigate teachers' perceptions of strategies and materials

to deliver literacy instruction during the pandemic among elementary students with ASD in a midwestern state across urban, rural, and suburban areas. Existing literature came from noneducator viewpoints, and those studies that included teachers utilized surveys. In this study, I examined teachers' perceptions through individual interviews. Chapter 3 provides the research methodology for my study regarding literacy instruction and materials for students with ASD during the pandemic. The major sections of the chapter include information about the basic qualitative design and rationale, the role of the researcher, the methodology, participant selection, instrumentation, procedures, data analysis plan, trustworthiness, threats to validity, and ethical procedures.

### **Research Design and Rationale**

A basic qualitative research design was selected due to the nature of the RQ.

RQ: How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

Qualitative studies allow researchers to explore the thoughts or perceptions of participants (Ravitch & Carl, 2016). The basic research structure is used for obtaining fundamental knowledge and theory (Ravitch & Carl, 2016) and aligned with my study because there was not an existing body of knowledge on the topic at hand. The basic qualitative design is appropriate for studies where a person's interpretation of an event is important as well as how they attribute to the experience (Merriam, 2009). A basic qualitative design is also used when examining the practices, strategies, and techniques of teachers (Worthington, 2013).

The purpose of this study was to understand the perceptions of elementary teachers about literacy strategies and materials implemented during the COVID-19 pandemic among students with ASD. Gathering data about this topic illuminated how teachers viewed the new materials and strategies implemented during the pandemic as well as existing materials and strategies that were modified. Semistructured interviews allowed me to speak to teachers who had knowledge and experience with the problem and allowed me to see perceptions other than my own (see Ravitch & Carl, 2016).

### **Role of the Researcher**

I was the primary data collection instrument in this study because I conducted the interviews and analyzed the data. I used semistructured interviews to gather a deeper understanding, rather than using tools such as surveys or questionnaires. I distinguished myself and shared my credentials with the participants. I did not have prior relationships with the participants, and participation in the study was voluntary and without compensation.

I am an educator in a midwestern state; however, I did not invite participants from any district where I have previously worked, nor from my current employer. All participants invited to partake in my study were from urban, rural, and suburban areas where I did not have personal connections.

To protect the participants and make them feel comfortable, I provided the informed consent forms and introduced myself before the study took place. I practiced by interviewing colleagues, with whom I have taught previously, before conducting the study to make sure the participants would feel safe and that I was listening carefully. I

was honest, transparent, and avoided pressuring participants. I allowed participants to use a pseudonym if they chose to do so and notified them that participant numbers would be used in my data to protect confidentiality. Participants were told they could pass on any question they preferred not to answer. Chaining, also known as the snowballing format (see Patton, 2002), was used to recruit participants. This strategy asks well-situated people to recommend potential participants who may be well informed on the topic (Patton, 2002). The participants were asked to send my invitation (see Appendix A) to other teachers who may have been interested in participating in the research; this snowballing or chaining facilitated gaining a large enough pool of participants from urban, rural, and suburban areas. I did not begin my study until I had permission to do so from Walden University's Institutional Review Board (IRB).

### **Methodology**

Twelve elementary teachers were invited for individual virtual interviews from urban, rural, and suburban districts within a midwestern state to share their perceptions of literacy strategies and materials used during the pandemic with students with ASD. Potential participants indicated interest by contacting me directly as indicated on the invitation or by completing the Google Form attached (see Appendix B). It was important to use urban, rural, and suburban areas to make the study generalizable to a larger scale population. Participants were asked to indicate if they were teaching in an urban, rural, or suburban school during the pandemic.

## **Participant Selection**

After interest was indicated, the invitation (see Appendix A) was sent via email to elementary teachers meeting the criteria. Participants were welcome to send the invitation to other teachers who may have been suitable for this study. Chaining, also known as snowballing, recommended that participants suggest others who may be well informed on the topic (Patton, 2002). The invitation can be seen in Appendix A. Informed consent was sent to the first four teachers from each of the geographic classifications of schools who met the criteria. Once they consented, they were contacted to set up a time and date for the interview.

The criteria for selection included the following: (a) The teacher instructed children in Grades K to 5, (b) the teacher provided literacy instruction, (c) the teacher was employed by a public school during the pandemic from March 2020 through May 2021, (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD, and (e) the teacher was teaching from a midwestern state during the pandemic. The invitation stated that all four criteria had to be met to participate in this study. Selecting 12 participants was my starting point; if data saturation had not been reached, the number of participants would have been expanded by using additional teachers from the pool of applicants. The initial posting via Facebook and application remained open until my research was completed in case additional data were needed.

## **Instrumentation**

Individual, semistructured interviews were conducted with 12 participants. The interview questions were prepared in advance and created by me (see Appendix C). I



conducted all interviews from my work office and with my camera turned on. The participants were told that their names would not be used and that participant numbers would be generated to protect confidentiality in my report. The participants were notified in advance that the interviews were conducted and recorded using the Zoom platform. Data from the interviews were transcribed using the Microsoft Word dictation software. Coding was completed by using descriptive coding and guided by the principles of Saldaña (2016). I used field notes during the interviews to capture body language, intonation, prosody, and anything that was not captured by the transcription software. Because the interviews were captured and recorded using Zoom, I reanalyzed the body language by reviewing the interviews.

Interview protocol focused on connectivity, humanness, and empathy (CHE), also known as the semistructured CHE method (see Brown & Danaher, 2019). Semistructured interviews include prepared topics to be explored and questions to be asked yet facilitate open-ended responses by the participants (Brown & Danaher, 2019). Semistructured interviews are in the middle of the spectrum between fully structured, verbatim-type interviews and free-flowing conversational style interviews (Brown & Danaher, 2019). CHE are principles that set participants at ease and build rapport among researchers and participants (Brown & Danaher, 2019).

The interview questions were created based on the literature review and the conceptual framework (see Chapter 2). After completing the literature review for this proposal, I created the interview topics and questions (see Appendix C) in a semistructured format. The questions for the interviews (see Appendix C) follow similar

topics as the headings and subheadings in my literature review (see Chapter 2). Each focused on the teachers' perceptions of literacy instruction and materials and used during the pandemic for ASD students.

Validity was established by member checking and audit trails. I assumed that the interview questions were valid because they aligned to the RQ and did not stray from the target topic. Audit trails are a description from start to finish of a research project or study, providing a clear path of the research (Lincoln & Guba, 1985). Member checking was conducted to validate emerging themes and check whether my interpretations of the data were valid. Member checking was done by emailing the transcripts of the interviews to the participants, providing them the opportunity to engage with, add to, and interpret the data, or make revisions after the interview (see Birt et al., 2016).

Twelve participants were invited to participate in the interviews. If data saturation had not been achieved, the participant pool could have been expanded. The semistructured interview questions (see Appendix C) were worded to gain the most data possible. Some researchers refer to this line of questioning as grand tour questioning (see Leech, 2002). The questions were open-ended and led to in-depth responses.

## **Procedures for Recruitment, Participation, and Data Collection**

### ***Recruitment***

I created a Facebook posting (see Appendix A) that invited teachers to participate in my study. The posting included the criteria required: (a) The teacher instructed children in Grades K to 5, (b) the teacher provided literacy instruction, (c) the teacher was employed by a public school during the pandemic from March 2020 through May

2021, (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD, and (e) the teacher was teaching from a midwestern state during the pandemic. Respondents who met the criteria were invited to participate in an interview through an email invitation (see Appendix A) and informed consent. The first 12 teachers from a midwestern state who met the criteria and responded were scheduled for a date and time to meet using Zoom.

After teachers who had met the preestablished criteria had responded, the dates and times available for participation were sent out in a calendar format with a Zoom link. Reminder notices were sent via email to each participant 24 hours before the interview with the Zoom link.

### ***Participation***

On the day of the interview, I entered the Zoom forum 15 minutes before the scheduled time. I made sure the record button was on and both the audio and visual displays were working correctly. When the participant entered, I reminded them of the informed consent policy and ensured the participant met all requirements.

### ***Data Collection***

I asked the interview questions (see Appendix C) and recorded the interviews via Zoom. I took note of body language, intonation, and other cues that the audio recording did not transcribe. Participants were scheduled for a single session, 1-hour interview. Participants could Zoom from the place of their choosing. After the interview, I thanked the participant for their time and cooperation. I made sure I was considerate of the 60-

minute time frame promised, by setting a timer. I also reminded each participant that a transcript would be emailed to them so that member checking could be performed.

Within 3 days of the interview, I sent the audio transcription to the participant to check for any inaccuracies. Participants were allotted 7 days to make any changes. Instructions were included with the transcript along with the deadline and my contact information.

### **Data Analysis Plan**

All interview questions aligned with the RQ:

RQ: How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

Within 3 days of each interview, I used Microsoft Word dictation software to transcribe the audio. The transcript was analyzed using descriptive coding using Nvivo software. Descriptive coding typically answers the questions who, what, where, how, and why (Andrasik et al., n.d.). The RQ should influence the type of coding, and descriptive coding is typically used when RQs examine the perceptions of participants (Saldaña, 2016). Descriptive coding is an elemental method of first cycle coding (Saldaña, 2016). In qualitative studies, the codes are researcher generated and can be used for detecting patterns, categorizing data, theory construction, and other analytic purposes (Saldaña, 2016). Descriptive coding produces topics that can be indexed and categorized (Saldaña, 2016), therefore creating manageable, smaller units of information (Knafl et al., 1988). This type of coding allows the researcher to examine the topic and provides information

that is generalized about topics from participants' responses (Saldaña, 2016). This is often called the “bread and butter” approach because it provides basic, foundational information from a beginning researcher (Saldaña, 2016).

After the first cycle of coding, pattern coding was completed to find common themes and patterns. The second round of coding can identify emerging themes and make a more meaningful unit of analysis (Saldaña, 2016).

### **Trustworthiness**

Trustworthiness can be established through credibility, transferability, dependability, and confirmability (Siegle, 2019). Completing member checking ensured credibility. Member checking was done by sending the transcript to the participants after analysis to check for interpretation and errors (Seigle, 2019). Through audit trails and member checking, I established the credibility of my research.

Transferability is the ability of the study to be applied in other contexts or with other respondents (Siegle, 2019). A thick description was warranted, describing the data with details so that the reader can make judgments (Siegle, 2019). Purposeful sampling was done by inviting participants from various school districts that were rural, urban, and suburban. The participants needed to meet the specific criteria outlined in advance: (a) The teacher instructed children in Grades K to 5 (b) the teacher provided literacy instruction (c) the teacher was employed by a school during the pandemic from March 2020 through May 2021 (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD and (e) the teacher was teaching from a midwestern state during the pandemic.

Dependability involves demonstrating evidence that if replicated, with the same or similar participants, in a similar context, the findings would be the same (Siegle, 2019). My study used audit trails that included a description from start to finish, and a clear description of the research path (Lincoln & Guba, 1985).

Confirmability is the qualitative counterpart to objectivity. Reflexivity helped me to be objective throughout the research process by knowing myself, my positionality, and my subjectiveness (Ravitch & Carl, 2016). The reflexivity chart created by Ravitch and Carl (2016) assisted me with self-assessment at each stage in my research. The awareness of my identity and impact along with biases was crucial to the study.

### **Ethical Procedures**

I assured the participants proper safeguards were in place to protect their privacy. To ensure the confidentiality of the participants, I did not ask for the name of their school or district. I allowed participants to use a pseudonym during the interview and identified them using participant numbers such as P1 in my dissertation. Participants had the opportunity to complete member checking on the data before I entered it into the report.

Any identifiers that were given during the interview, such as students' names or course titles, were given pseudonyms in my report. All email addresses of the participants will be kept confidential and not used for any purpose other than the purpose of this specific study. The data from this study was kept electronically and not shared. The paper notes taken during the interview were transcribed and kept electronically. All paper documents will be shredded after 5 years. The IRB had approved the safeguards

documented in this chapter and had provided me with conformation number 08-04-21-1006652

### **Summary**

This basic qualitative study examined 12 elementary teachers' perceptions of literacy strategies and materials used during the pandemic with students diagnosed with ASD. Elementary teachers from a midwestern state across urban, rural, and suburban areas who met the criteria were invited to participate in semistructured interviews. The data from the interviews was transcribed and coded using descriptive coding. Audit trails and member checks were completed to ensure a trustworthy study. All ethical considerations suggested by the IRB were taken seriously. The participants were assured that I will keep their identities confidential and proper data storage has been secured. In Chapter 4 the results of the study are described including the setting, data collection, and data analysis.

## Chapter 4: Results

The purpose of this basic qualitative dissertation was to examine teachers' perceptions about the materials and strategies used to deliver literacy instruction during the COVID-19 pandemic for students with ASD. Teachers from suburban, urban, and rural areas of a midwestern state participated in individual semistructured interviews. The interview questions aligned with the single RQ:

RQ: How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

I begin this chapter by describing the setting and participant demographics. The second section addresses the data collection process. The following two sections contain the data analysis process and the results of the qualitative data analysis. A presentation of the evidence of trustworthiness and a chapter summary conclude Chapter 4.

### **Setting**

The setting of this study was a virtual platform, Zoom. Participants were free to partake in the interviews from a location of their choosing. I conducted the interviews from my office so there would be minimal background noise and distractions. Safeguards were put into place to protect the privacy of the participants. I did not ask for the names of the schools or districts the participants discussed. Each participant was described in the data using P1, P2, and so forth, instead of their names. Each participant participated in the member checking process before I entered the data into the report.



Any identifiers used during the interview, such as students' names or course titles, were not used in my report. All email addresses of the participants will be kept confidential and not used for any purpose other than the purpose of this specific study. The data for this study will be kept electronically and not shared. The paper notes taken during the interviews were transcribed and kept electronically. All paper documents will be shredded after 5 years.

Participants were asked three background questions (see Appendix C). The first asked the participant to identify their teaching experience during the pandemic as urban, rural, or suburban. The K to 5 educators were selected based on an even dispersal from urban, rural, and suburban areas. Inadvertently, there was no representation from Grades kindergarten, 4, and 5, except for those included in the multiage settings. A condition that may affect the data is that the first seven participants' single-session interviews took place during the summer break in August of 2021. The final five participants' interviews took place in September, once the 2021-22 school year had commenced. A deviation from the plan described in Chapter 3 was that P8's interview was conducted via telephone because the internet connection was troublesome during the time of the interview. The semistructured interviews allowed me to ask the prepared questions and request further explanations if necessary. A complete list of the predetermined interview questions can be found in Appendix C. Some participants did not distinguish between literacy materials and instructional strategies, and clarification questions were asked.

### **Data Collection**

After approval from Walden University's IRB, I began recruiting participants from a social media platform using the study invitation (see Appendix A). All respondents who completed the Google Form found on the invitation (see Appendix B) were sent an email inquiring about their availability and provided the Informed Consent Form. The first four respondents from each of the established geographic settings were contacted via email. One participant who initially expressed interest did not return correspondence after the Informed Consent Form was sent. After two email attempts, another participant was invited.

### **Participants**

The participants for this study met the following requirements: (a) The teacher instructed children in Grades K to 5, (b) the teacher provided literacy instruction, (c) the teacher was employed by a public school during the pandemic from May 2020 through March 2021, (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD, and (e) the teacher was teaching in a midwestern state during the pandemic. Table 1 provides the background information regarding the participants.

**Table 1***Participant Demographics*

<b>Participant</b>	<b>Grade level (s)</b>	<b>Location of the school</b>	<b>Type of instruction during the 2020-2021 school year</b>
P1	2	Suburban	Hybrid
P2	Multiage	Suburban	Hybrid
P3	3	Suburban	Hybrid
P4	3	Rural	Hybrid
P5	2	Rural	Hybrid
P6	3	Urban	Hybrid
P7	1	Urban	Online
P8	1	Suburban	Online
P9	Multiage	Urban	Hybrid
P10	3	Rural	Hybrid
P11	3	Rural	Hybrid
P12	2	Urban	Hybrid

**Location, Frequency, and Duration**

Each participant was scheduled for a single session, 1-hour, semistructured interview. The interviews took place over 8 weeks during August and September of 2021. The interviews took no more than 1-hour.

**Recording**

The interviews were conducted and recorded using the virtual platform, Zoom. Each interview was transcribed using Microsoft Word dictation and coded using NVivo software. The only deviation from the plan presented in Chapter 3 was that one interview was conducted via telephone instead of Zoom due to an internet problem. The semistructured interviews allowed me to ask the prepared questions and request further

explanations if necessary. A full list of the predetermined interview questions can be found in Appendix C. The initial semistructured, preplanned interview questions were clarified when some teachers did not distinguish between the literacy materials and strategies during the interview.

## **Data Analysis**

### **The Process**

I was the sole researcher who conducted, transcribed, coded, and analyzed the data. Each interview began with a brief description of the study and informed consent. Following the introduction, I asked the three background information questions (see Appendix C). After gathering the background information, the semistructured questions were asked (see Appendix C), with additional follow-up questions as needed for clarification. After each interview, I thanked the participant for their time and explained the member checking process. The audio recording was transcribed and sent to each participant to review and send back within a week of the interview. All members approved the transcripts as submitted.

The analysis was completed using coding through NVivo software and guided by the framework described by Saldaña (2016). Saldaña (2016) stated that there are times the results are best put into words and times they are best represented by numbers. I decided that a qualitative study would best align with the use of semistructured interviews involving teachers' perceptions of the literacy instructional materials and strategies used during the pandemic. Coding was done to arrange ideas in a systematic order, to divide, group, reorganize, and link data (see Saldaña, 2016). Initial coding was

done by assigning a code to a word or phrase to best capture an attribute (see Saldaña, 2016).

The coding process began by analyzing item by item instead of participant by participant through NVivo software. A datasheet for all responses for each question was created, analyzed, and coded (see Appendix D). Nvivo software was used to assign codes to words and phrases that were key concepts in the participant's interview. Those codes were sorted in response to the interview question. The codes were then investigated on a deeper level to see if the patterns could be characterized by similarity, difference, frequency, sequence, correspondence, or causation (see Saldaña, 2016).

### **Emerging Codes, Categories, and Themes**

#### ***Inductive Coding***

The initial codes were determined based on Saldaña's (2016) coding manual. The first cycle of coding was done using inductive coding because it is recommended for using interviews to attune with participants' perceptions and prioritize their voices (see Saldaña, 2016). This modality of coding uses concepts drawn from the participants' words, and therefore are put into quotation marks (Saldaña, 2016). Interviewers using inductive coding assign codes to words or phrases that appear to stand out while simultaneously looking for categories (Saldaña, 2016). A large focus when using inductive coding is on preserving the meanings and viewpoints of the participant (Saldaña, 2016).

#### ***Pattern Coding***

After the first cycle of coding, synthesizing took place to combine codes to form patterns and categories using pattern coding (see Saldaña, 2016). Pattern coding is a second cycle coding method that groups initial data into smaller categories or themes (Saldaña, 2016). The major themes derived from pattern coding can be found in Table 2 and are discussed in the next section. Discrepant cases, or the codes used by less than three participants (Saldaña, 2016), were coded and analyzed. If the coded term or phrase was determined to be significant, it was included in the data. Discrepant cases in the data were described, and the participant's number was provided.

**Table 2***Second Cycle: Pattern Coding*

Reading	Writing	Scaffolding	Social skills	Speaking & listening	Technology
Basal reader	Elkonin/sound boxes	Alternate modes of communication for nonverbal students	Alternate modes of communication for nonverbal students	Alternate modes of communication for nonverbal students	Alternate modes of communication for nonverbal students
Chapter books	Highlighting	Breakout rooms	Breakout rooms	Breakout rooms	Breakout rooms
Elkonin/sound boxes	Jamboard	Changing the environment	Changing the environment	Changing the environment	Changing the environment
<i>Foundations</i>	Journaling	Direct instruction	Computer programs/Apps	Interactive activities	Computer programs/Apps
Heggerty	Lucy Calkins	Prewriting	Easter Seals School Closure Kit	Peer to peer	Google Slides
Highlighting	Prewriting	Routines	Interactive activities	Read- aloud	Highlighting
HMH Into Reading	Sentence starters	Tactile techniques	Peer to peer	Self-expression	Interactive activities
Read-aloud	Tactile techniques	Teach the families	Self-expression	Story retell	Jamboard
Reading A-Z	Writing on the lines		Social stories	Virtual lunch (peer to peer)	Schoology
Reading packets			Virtual lunch (peer to peer)		Videos
Reading Street					Virtual lunch (peer to peer)
Scholastic News					
Story retell					
Story Works					
<i>Wonders</i>					

**Results**

In the following section, I discuss the themes related to K to 5 teachers' perceptions of the literacy materials and strategies used during the COVID-19-pandemic amongst students with ASD. Using a basic qualitative design, 12 participants were asked semistructured interview questions to gather data about the RQ below.

RQ: How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

The demographic information about the participants in this study can be found in Table 1. The results from the current basic qualitative study add to the current body of literature about literacy instruction for children with ASD.

The semistructured, preplanned interview questions (see Appendix C) were used with 12 participants and clarified when needed. The first cycle coding was done using inductive coding. Appendix D illustrates the data gathered from the first cycle, inductive coding and was organized by each interview question.

After analyzing the first cycle data, it was evident that to best answer the RQ, it was necessary to first identify the literacy materials and strategies the teachers used during the COVID-19 pandemic. After the first cycle of coding (Appendix D), the second cycle of coding was done using pattern coding. Through pattern coding, responses were categorized into the emerging themes of reading, writing, speaking and listening, scaffolding, technology, and social skills (see Table 2). After determining the materials and strategies that were used during the pandemic, the other interview questions were used to determine the perceptions of the teachers.

### ***Reading***

Reading materials and strategies employed during the pandemic were discussed by all 12 participants. Participants reported using both traditional and digital materials, as well as a variety of reading strategies. The perceptions about the materials and strategies are as follows.

**Traditional Materials.** Some traditional materials used during the COVID-19 pandemic included basal readers, chapter books, magazines, and phonics materials such



as *Foundations* and Elkonin boxes. The participants reported having both challenges and successes with these materials. Participant 7 and P10 both discussed holding the traditional books up to the camera while conducting read-alouds, and both teachers felt the strategy was ineffective when done online. The teachers reported having greater success when all students were able to access the materials to follow along. Two participants said the schools had Scholastic Magazines delivered directly to the student's homes, and the students reportedly enjoyed that. Participant 4 and P12 stated that the students enjoyed reading nonfiction stories from magazines, newspapers, and authentic reading materials.

**Digital Materials.** Some of the materials and strategies teachers had positive comments about included the online sites Reading A-Z, Reading Street, and Story Works. Teachers benefitted from the instructional support online for students, families, and teachers. Participant 3 said that the digital tool, Kami was an extremely helpful resource for assessing reading fluency. Participant 3's students used Kami to record oral reading and then submit videos for teacher review. The teacher was able to provide video feedback using the same forum. Participant 10 said that young learners benefitted from playing sing-along songs where the words appear at the bottom of the screen. Participant 10 also provided her students with several Apps that provided free audiobooks so students could listen to the stories in the car.

**Reading Strategies.** Three targeted strategies that had been used as EBPs with students with ASD before the pandemic were investigated using interview questions.

Participants were asked about using DR, shared reading experiences, and read-alouds during the COVID-19 pandemic.

**Dialogic Reading.** The perceptions of the participants were that it was more challenging to use this strategy online. Challenges with DR included the lack of attention online, the inability to hear the AAC device over the computer, the level of rigor in this task, and the lack of participation in the virtual forum. Only one participant shared that she enjoyed using DR during the pandemic, but she says she had only high functioning, third graders with ASD.

**Shared Reading.** The participants had a variety of perceptions when using shared reading during the targeted time frame. Some perceived shared reading as a calming strategy for students with ASD. The participants enjoyed using this participatory strategy to boost peer-to-peer interaction. However, other participants reported that sitting together on the carpet in the brick-and-mortar buildings kept the children's attention, whereas the virtual forum was not conducive to the same type of experiences. The participants also reported struggles with shared reading in the face-to-face environment during the COVID-19 pandemic. Some participants said that materials were no longer allowed to be shared and due to social distancing and movement limitations in the classrooms, shared reading could not be done effectively.

Family support was one of the most discussed themes regarding shared reading. Some teachers reported using the families of students to provide shared reading experiences. Teachers taught family members to adjust their pace, intonation, and materials to meet their child's needs. Teachers encouraged students who did not have

family support to have a reading buddy. Using repetition books and predictable books for these experiences were also recommendations. Breakout rooms supported the virtual peer-to-peer shared reading experiences for some of the participants.

**Read-Alouds.** Read-alouds were a popular way for teachers to share stories with children. Most of the discussions during the interviews involved the change of environment when using this strategy. Nearly all the teachers spoke about missing carpet time with their children. Teachers found successes when trying new modalities such as using narrated electronic texts or prerecording the story. Nine of the teachers reported the inattentiveness of the children when reading in a virtual classroom. Some said that they were able to use the read-aloud strategy if there were frequent pauses for discussion and questions. Another challenge was that when hard copy materials were distributed from the schools, many families did not pick up the items. Participant 9 stated, “Although doing the daily read-aloud with my students was much more challenging online, it could not be eliminated. This is my chance to model elements of fluency like pacing, intonation, and tone.”

**Reading Recommendations.** Participant 3 said modeling, providing direct instruction, and scaffolding are the three strategies she uses to support her students with ASD online. She also mentioned that using a digital highlighting tool kept student engagement online. The participants reported that shortening the reading time helped keep the students focused. Participant 5 suggested providing all materials in a forum like Google Classroom because many families did not retrieve needed materials from the school. Participant 2 reported that having families read to the children with ASD at home

was more beneficial than reading through the computer screen. She said, “Teaching the families the strategies and ways to support their child is beneficial in so many ways.”

### ***Writing***

Just as with reading, all 12 teachers reported using a variety of writing materials and strategies during the pandemic. Participants reported using both traditional and digital materials. The perceptions about the materials and strategies are as follows.

**Traditional Materials.** Teachers reported using a variety of traditional materials such as paper and pencils, tactile writing surfaces, handwriting booklets, and journals. Students were able to submit their writing by taking photos of their work, scanning paper assignments, or having family members drop off their work at school. A challenge was that not all students had access to the materials needed. The participants in the study reported that not all families picked up supplies for their children. Other challenges discussed were that not all children had family support for writing. Teachers also struggled to find a technique to support the hand-over-hand training that many students with ASD require.

**Digital Materials.** Teachers used Chromebooks, iPads, handwriting apps, and discussion boards to facilitate writing. The teachers mentioned several concerns about using technology to support writing. A concern was the regression of fine motor skills. Writing practice with pencils decreased during this time, it took much longer to type out their work so teachers pacing of instruction slowed down, and handwriting skills were subpar due to reduced practice. However, an increase in typing skills was mentioned by several participants.

One targeted strategy that has been used as an EBP with students with ASD before the pandemic was investigated using an interview question. Participants were asked their perceptions about narrative writing during the COVID-19 pandemic. The perceptions are as follows:

**Narrative Writing.** After the second cycle of coding, the emerging themes regarding narrative writing were materials, strategies, and challenges. Webs, graphic organizers, and visuals were commonly utilized materials and were perceived as extremely useful. The teachers also suggested allowing students who were unable to write to orally tell their story using Kami or Jamboard. Participants 1 and 6 suggested using sentence starters as a way of prompting students who may have difficulty with self-expression. Teachers also perceived allowing a choice in writing topics and having discussions about students' writing as motivating. Participant 6 said that she started by having the students draw pictures, then moved to write ideas in a graphic organizer, followed by creating sentences. Participant 6 said to take it one step at a time and use YouTube videos for support.

**Writing Recommendations.** Participant 1 and P2 said their students typically have trouble getting their ideas on paper, however, both stated that sentence starters and prompting often help. Several teachers recommended the use of traditional journals, blogs, or diaries for students as helpful for developing writing skills. The most common online recommendations were Jamboard and discussion boards. Participant 6 said students with ASD needed support at home while completing writing assignments. The fine motor skills associated with writing were a concern for some of the participants. It

was mentioned that the amount of time spent using a pencil was reduced, while the amount of time typing increased. Skills such as the Pincer grasp may need attention in the future.

### *Speaking and Listening Skills*

Some of the modes of communication during online learning, hybrid instruction, or face-to-face instruction during the pandemic needed to be altered. Some students with ASD used an AAC device to communicate. During traditional face-to-face instruction, teachers like P2, P3, and P9 found the AAC device to be “lifechanging” and had positive perceptions. During virtual instruction, none of the teachers discussed positive perceptions. One suggestion was to investigate alternate modes of communication such as using the chat or a discussion board.

Speaking and listening skills are some of the most challenging skills for students with ASD (National Institutes of Health, 2020). Many children with ASD are nonverbal and must speak using an alternative to the human voice. One interview question targeted the perceptions when using an AAC device during the pandemic. AAC users faced an additional challenge during online instruction. P1 stated, “Now, instead of my students learning to use one screen as their voice, they are now having to navigate two screens simultaneously.”

Listening skills are also an area of focus for many students on the spectrum (National Institutes of Health, 2020). The receptive listening skills were subpar when compared to their peers (National Institutes of Health, 2020). The teachers in this study reported an extra layer of complexity for the target students.

**Story Retell.** An interview question asked participants for their perceptions of using story retell during the pandemic. Story retell, a strategy often used to check comprehension, can also facilitate and assess speaking and listening skills.

Some students may not yet be able to use this strategy to show comprehension. Participant 2 suggested starting with a smaller step. She said to ask the child about their favorite part of their day as a steppingstone and for the families to model this. Participant 3 recommended the more advanced students use Kami to record videos or submit written retells about the stories they have read. Some teachers positively perceived Think-Pair-Share and peer-to-peer retells as helpful so students could interact with peers. Participant 4 found story retelling more challenging online and said he found the strategy more beneficial as a whole group when virtual. Participant 6 said stopping after every few paragraphs or pages is a helpful scaffolding measure for her students with ASD. Participant 6 said that this “chunking” strategy helps keep the attention and build comprehension skills. She also says making a list on a Google Document or in writing provides the visual support some of the target students need.

**Task Analysis.** The teachers in this study reported using TA as the most successful method to work on speaking and listening skills. Using magnet boards and dry erase boards for schedules, routines, and tasks were valuable resources for P2. Participant 1 and P2 said that a Velcro board for first/then activities helped students transition and motivated students. Video modeling was perceived as extremely helpful by students and teachers. P2 shared, “Using prerecorded videos that could be played repeatedly by children and their families helped teach new skills and routines.”

**Speaking and Listening Recommendations.** Breakout rooms were positively perceived by participants to facilitate peer-to-peer interaction. The participants recommended that families prepare the environment to meet the child's needs. P8 stated, "Having a quiet place in the home as a workstation without distractions is the best thing you can do to help us." The participants also said that family support makes the biggest impact on the success of students during virtual learning. Some also recommended having opportunities for the child to express themselves as well as time to interact with their peers. Participant 7 used virtual lunches where students were provided free time online to eat their lunch, chat about their hobbies or pets, and play games. Participant 7 said the students had fun during this time and loved using the chat function to write to each other.

### *Social Skills*

Many of the participants commented that social skills were a focus in their traditional brick-and-mortar classrooms. When shifting to an online environment, the participants found creative ways to engage their students in peer-to-peer interaction. Some of the methods were perceived as useful tools during online learning.

The change in environment was difficult for many students with ASD. Students with ASD find comfort in routines and structure. All 12 of the teachers mentioned situations when the children were frustrated. Several discussed meltdowns and "making the teacher go away with the click of a button," said P1. The participants also stated that the self-expression piece was much more difficult during the pandemic because unlike traditional face-to-face learning that allows for pointing to objects needed, interpretation



of body language, and facial cues to assist teachers, learning online and social distancing in a masked environment did not allow for the traditional strategies. Participant 8 discussed a student who, before the pandemic, paced the room as he listened to stories or sat in the sensory swing while completing difficult tasks like answering comprehension questions. Participant 8 said that the change of environment limited the number of resources students had access to and the amount of movement that could take place while learning.

As previously stated, social interaction was especially limited for nonverbal students. The AAC devices used to communicate in the traditional classrooms were unable to be detected as the voice when using some digital platforms. Other times, students were unable to navigate multiple devices simultaneously.

**Social Skill Recommendations.** Some of the teachers perceived breakout rooms as helpful. Participant 9 shared, “The breakout rooms allowed students to converse and even if they got off-topic, I didn’t care. They need that chance to show their friends their puppy and show off the picture of grandpa in California.” Participant 7 said her students enjoyed free time online during her “virtual lunches” on Zoom. Using various technology platforms to either orally speak freely with peers or to use the chat function to communicate was perceived as well received by students and families.

Participant 2 said the *Easter Seals School Closure Kit* assisted students greatly when transitioning to an online environment. She said training families to use social stories to provide emotional preparation is perceived as tremendously helpful by the students and families she has been working with.

### ***Technology***

The 12 participants were asked an interview question examining if there were any instructional strategies or materials implemented during the pandemic that the teacher had not previously used. Most participants listed online programs and Apps. All 12 participants said the shift from face-to-face teaching to becoming an online instructor was new to them.

**Technology Materials.** The participants in this study relied upon the Google tools during the pandemic. The participants had successes with Google Jamboard, Google Docs, Google Classroom, Google Forms, and Google Slides. Other positive comments were made about the virtual forums such as Microsoft Teams, Zoom, and Google Meets. Many Apps, online games, and websites were perceived as helpful. A common theme was that teachers found Kami to be a valuable resource for online learners. Participant 3 stated that it allowed her to provide individual feedback to her students, after her students could show her what they could do independently. She said she especially liked that students could add notes directly to a PDF.

**Technology Strategies.** The participants used grouping strategies to facilitate learning. Several participants stated that breakout rooms helped condense group sizes to foster discussion online. Some of the participants said recording lessons helped families so they could complete the lessons with the students at a time that was convenient for the family. Most participants discussed the need to work with the family and provide resources and strategies for the family to support the child at home. Technology training for families and students was perceived as highly successful.

**Technology Challenges.** The digital divide was a concern to the teachers. Some students did not have access to technology, especially at the beginning of the pandemic. Participant 12 said, “Even once students did get the technology, there was no one there to help them use it.” The most frequently tallied code, “Family support” was stated by all 12 participants. There was an unequal level of support at home. Participant 2, P3, and P4 reported having high levels of professional development and training for the teachers to use the new technology. Other teachers such as P7 and P10 mentioned that it was overwhelming. Participant 1 said, “It is difficult to scroll through 26 faces on a screen to do formative checks during instruction.” She also reported, “It is more difficult to have fun with my students when we are online.”

**Technology Recommendations.** The recommendations are to use direct instruction for teaching families and children to use the technology. Participant 2 says having visuals made in advance as reminders to mute the microphone or turn on the camera can be beneficial. Participant 7 said choosing one platform and sticking with it is helpful for the children. Five of the teachers said that they experienced situations, when there was not support available for the child or the adult who was with the child was not able to assist. If families were trained to use the technology and were available when children were in need, teachers say the experience would be better for all involved.

### ***Scaffolding***

The environment can also be tailored to facilitate learning. If students are working from home, a workspace should be created. The workspace should have all the tools they will need to be successful. Participant 7 reported that some students would get left behind

because when it was time to use a pencil, students would be gone for several minutes searching for one. Participant 7 and P12 stated that many families did not pick up the needed supplies from the school. Participant 2 and P10 said that if parents created a space with little distractions that was consistently used in combination with a daily learning routine, students made greater advances.

All 12 participants encouraged teaching the parents to support the children. Participant 4's school had a family night in the school parking lot where food and entertainment were provided by the school to stimulate a sense of community and unification. Participant 4 said the turnout was impressive. Other teachers like P1 and P2 delivered materials to the homes of the students who did not pick up supplies. To help instill further family support P1's school did a family reading week. Participant 1 said families brought beach towels and sat outside to hear read-alouds and participate in live teaching events during the shutdown.

Participant 8 shared, some students with ASD were able to complete the online learning and pay attention. The students were given breaks and a structured routine. It helped that they knew the expectations and were provided with calming kits and strategies. Families were able to use the calming kits and strategies at home that included pop-its, fidgets, pinwheels for deep breathing, and visuals. These tools helped them reengage.

**Authentic Experiences as Scaffolding.** To provide some authentic experiences teachers created file folder games, used digital libraries, and technology supports. Some families did not have anyone in the home who was literate. Participant 2 and P12 both

suggested audiobooks and visually narrated e-books. There also was a special electronic pen that would record notes for the students. Participant 2 suggested finding resources to match each child's needs such as videos with sign language translation, dual language books, and YouTube videos with closed captioning for the hearing impaired. Participant 7 said she used household items to teach, so when learning about plants, she showed students an actual plant from her garden. Participant 3 said her students enjoyed learning to code video games and create cartoons to integrate students' interests with literacy instruction. Participant 1 recommended, "Thinking outside the box to create learning experience that relate to careers or things the students enjoy."

**Think-Alouds as Scaffolding.** It is common for teachers to help build metacognition through think-alouds. The participants in this study provided mixed perceptions about this strategy. Some teachers said that they no longer had time to use this strategy online. Others perceived think-alouds to be less effective when conducted virtually. Other teachers said they used this strategy frequently and found it helped students. Some participants reported an increase in reliance on think-alouds after the shift to online teaching.

### ***Future Recommendations***

The participants were asked if there were any strategies or materials, they would recommend using during future school closures for elementary students with ASD to help develop literacy skills. The data resulting from second cycle coding in response to the interview question is provided in Table 3.

**Table 3***The Literacy Materials and Strategies Recommended by Teachers*

Materials	Strategies
BitMoji	Breaks
Breakout rooms	Choices
Class Do Jo	Collaborate
Family support	Consistency
Google Classroom	Model
Google Meets	Movement
How-to videos	PBS
Jamboard	Peer-to-peer
Kami	Prep in
Materials for all students: Chromebooks, headphones, supplies...	advance Share
NearPod	resources
Online programs & Apps	Simplify
Other teachers	instructions
See-Saw	Tech
Smartboard	training
Teachers Pay Teachers	Trial and
Traditional posters, drawings, art	error
Varied resources	
YouTube	

The participants of this study said that they love teaching and helping children. Although the pandemic has made some elements of teaching more challenging, all teachers reported having some successes. Participant 2 says during future school closures it is important for educators to find a balance between work and home life, even if you are working from home. The participants stressed the need to be flexible but well prepared. The overarching theme was that unity is important. The participants said that working with families and other teachers was the key element in triumph during this unforeseen time. When asked for recommendations of literacy materials and strategies to use with students with ASD during future school closures, P1 said, “Don’t stress. It’s hard, but if you love what you do, make sure you convey that on the screen. Give yourself grace and know that you will feel overwhelmed at times. Remember, it is not about test scores, it is about connecting with your kids and building that rapport and relationships.”

### **Evidence of Trustworthiness**

Trustworthiness can be established through credibility, transferability, dependability, and confirmability (Siegle, 2019). As discussed in Chapter 3, member checking was conducted to ensure credibility. Member checking was done by sending the transcript to the participants after transcription to check for interpretation and errors (Seigle, 2019). Through audit trails and member checking, the credibility of my research was established.

Transferability is the ability of the study to be applied in other contexts or with other respondents (Siegle, 2019). A thick description was provided in Chapter 4, reporting the data with enough details that the reader can make judgments (Siegle, 2019). Purposeful sampling was completed by inviting participants from various school districts that are rural, urban, and suburban. The participants all met the specific criteria outlined in advance: (a) The teacher instructed children in Grades K to 5 (b) the teacher provided literacy instruction (c) the teacher was employed by a school during the pandemic from March 2020 through May 2021 (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD and (e) the teacher was teaching in a midwestern state during the pandemic.

Dependability involves demonstrating evidence that if replicated, with the same or similar participants, in a similar context, the findings would be the same (Siegle, 2019). My study used audit trails, providing a clear description of the research path (Lincoln & Guba, 1985).

Confirmability is the qualitative counterpart to objectivity. Reflexivity helped me to be objective throughout the research process by knowing myself, my positionality, and my subjectiveness (Ravitch & Carl, 2016). The reflexivity chart created by Ravitch and Carl (2016) helped me with self-assessment at each stage in my research.

### **Summary**

This basic qualitative study was conducted to answer one RQ.



RQ: How did kindergarten through fifth grade teachers perceive the strategies and materials used to deliver literacy instruction to students with ASD during the COVID-19 pandemic?

This research will contribute to the body of research regarding literacy instruction for students with ASD. Twelve K to 5 teachers were invited to participate in semistructured interviews. The participants who met the established criteria (Appendix A) were evenly selected to participate from urban, suburban, and rural settings. Individual interviews were conducted via Zoom and lasted no more than 1-hour.

After the interviews, the transcripts were sent to each participant for member checking. Once the member checking was completed, the transcripts were coded using NVivo software. The data were analyzed and categorized based on themes. The emerging themes were reading, writing, speaking and listening, scaffolding, technology, and social skills. Table 2 illustrated the codes that contributed to each theme.

After determining the materials and strategies utilized by the teachers, the codes were categorized under the emerging themes, and the perceptions of the participants were closely examined. The discrepancies, or codes that appeared less than three times (Saldaña, 2016), were analyzed. Discrepancies that were considered significant were included in the research data and attributed to the participant who provided the code. Throughout the data in this report, quotes from individual participants are provided as well as contributions unique to the participant.

The RQ was answered by K to 5 teachers sharing their perceptions of the strategies and materials used to deliver literacy instruction to students with ASD during

the COVID-19 pandemic. The responses showed that a variety of traditional and digital materials were utilized by the participants. Participants shared their perceptions of the strategies and materials used, but the participants had an array of insight. The materials and strategies with mutually favorable perceptions are discussed further in the recommendations section of Chapter 5. Chapter 5 will also provide an interpretation of the findings, limitations of the study, and conclusions.

## Chapter 5: Discussion, Conclusions, and Recommendations

The COVID-19 pandemic caused schools to close the doors of brick-and-mortar buildings and shift to various learning platforms. Because there was not an existing body of knowledge about the literacy instruction and materials used for elementary students with ASD during the pandemic, it was essential to examine the perceptions of teachers who offered the most proximal information to prepare for future school closures as well as to improve literacy skills for students with ASD. The purpose of this basic qualitative dissertation was to examine teachers' perceptions about the materials and strategies used to deliver literacy instruction during the pandemic for students with ASD from suburban, urban, and rural teachers in a midwestern state. The data from this study add to the broader body of research that may improve literacy instruction for students with ASD and help optimize the use of educational technology and materials in the event of future school closures for the growing autism community and their educators.

Data were collected through semistructured interviews to answer the research question investigating teachers' perceptions of the literacy instructional materials and strategies used during the COVID-19 pandemic with students with ASD. The data analysis from the interviews produced the themes of reading, writing, speaking and listening, social skills, technology, and scaffolding. Within the themes, teachers provided individual perceptions of the literacy materials and strategies used during the pandemic. Chapter 5 provides an interpretation of the findings, limitations of the study, recommendations, implications, and a conclusion.

### **Interpretation of the Findings**

Before the pandemic began, research demonstrated effective techniques to facilitate growth in literacy skills for students with ASD. The strategies included using shared reading (D'Agostino et al., 2018; Fleury et al., 2021; Kimhi et al., 2018; Wicks et al., 2020), story retelling (Kimhi et al., 2018; Stirling et al., 2017), DR (Coogle et al., 2018; Finke et al., 2017; Izreal, 2017; Kimhi et al., 2018), providing authentic opportunities to include literacy (Brozo, 2017; Hughes et al., 2014; Lanter & Watson, 2008), using visual supports (Morrow et al., 2019; Finnegan & Accardo, 2018; Izreal, 2017; Kimhi et al., 2018; Robledo, 2017), performing think-alouds (Brozo, 2017; Caroil & Peru, 2019; Lanter & Watson, 2008; Nicholson et al., 2021), narrative writing (Hilvert et al., 2020; Zajic et al., 2020a; Zajic et al., 2020b), TA (Baker et al., 2019; Blair et al., 2018), and reading aloud (Brozo, 2017; Cravalho et al., 2020, Kimhi et al., 2018). Past research has supported the EBP materials and strategies when used in the traditional brick-and-mortar classrooms. However, it was unclear as to how the same materials and strategies were perceived while shifting to various learning platforms during the COVID-19 pandemic. This study built on prior studies to extend knowledge in literacy education and to better prepare for future school closures.

The conceptual frameworks that underpinned this study were SDT to help understand the new educational setting and critical multimodal literacy because literacy was not defined only as conventional reading and writing but included drawings, photographs, role-playing, and an array of modalities to demonstrate comprehension. Six themes emerged after conducting semistructured interviews with 12 K to 5 teachers from

urban, rural, and suburban schools in a midwestern state. The themes were reading, writing, speaking and listening, technology, social skills, and scaffolding.

### **Theme 1: Perceptions of Reading Materials and Strategies**

During prepandemic times, shared reading, DR, and read-alouds were considered EBPs that teachers perceived positively (Brozo, 2017; Coogle et al., 2018; Cravalho et al., 2020; D'Agostino et al., 2018; Finke et al., 2017; Fleury et al., 2021; Izreal, 2017; Kimhi et al., 2018; Wicks et al., 2020), yet the participants in this study supplied a myriad of perceptions.

#### **Shared Reading**

Responses targeting perceptions of shared reading during the targeted time frame revealed that some participants perceived this strategy positively during the pandemic but most found shared reading to be more challenging to implement in online and socially distanced classrooms. The online challenges included difficulty maintaining the students' attention, the inability to monitor multiple children simultaneously, and access to texts for students. Although the virtual platform brought forth new challenges, similar materials to support ASD students recommended for shared reading in prepandemic times were perceived positively by the participants when used during the targeted time frame. The participants had positive perceptions of using stories of interest and predictable texts. The largest influence of shared reading was the level of family support. If families were willing and able to administer the readings with their children, teachers reported positive experiences. The participants recommended using breakout rooms to support shared reading in an online forum. Shared reading can be done peer-to-peer by creating a

reading buddies system. The data from this study showed that some ways to keep the attention of students include text tracking, highlighting, and using a small time frame for this activity. Quality over quantity was a common perception of the participants.

### **Dialogic Reading**

Before the start of the pandemic, DR had been regarded as an EBP of reading intervention (Coogle et al., 2018; Finke et al., 2017; Izreal, 2017; Kimhi et al., 2018), with evidence of significant vocabulary growth and improvements in expressive language among students with ASD (Coogle et al., 2018). During the pandemic, all participants except P3 perceived DR as nonbeneficial. The participants discussed the challenges of keeping attention, the rigor of the activity, and participation rates in the online environment. Participant 3 said that the program Kami helped her students respond to questions by audio recording answers and writing notations directly on the PDFs. While DR was beneficial in a brick-and-mortar setting, more research is needed for using DR in an online or hybrid forum.

### **Read-Alouds**

Reading aloud to students has been a favorite activity of many teachers as well as an EBP (Brozo, 2017; Cravalho et al., 2020, Kimhi et al., 2018). The participants in this study reported that they missed the carpet time and conducting read-alouds as part of their daily routine. The calming strategy that kept students engaged in the classroom was more challenging online. The participants continued to positively perceive the prepandemic techniques to support the effective read-alouds with ASD students such as

having materials to follow along with, allowing for movement so they are not seated in one position for extended amounts of time, highlighting, and using fidget toys.

### **Theme 2: Perceptions of Writing Materials and Strategies**

Students with ASD usually have difficulties with writing in comparison with their typically developing peers (Hilvert et al., 2020; Zajic et al., 2020b), especially in the domains of handwriting, text organization, and overall quality (Zajic et al., 2020b). Before the pandemic, research demonstrated that children with ASD benefitted from writing about their own experiences (Lanter & Watson, 2008). Previous literature recommended techniques to support narrative writing, such as a story outline, pictures, or artifacts from personal experiences (Lanter & Watson, 2008). The same techniques were perceived as helpful by the participants of this study. Allowing for other modes of communication like pictures, magnet letters, or word stickers was also perceived as effective before (Lanter & Watson, 2008) and during the pandemic.

The pandemic brought forth new writing concerns for students with ASD. The shift to online learning caused more typing and less use of a pencil. Participants voiced concerns of regression of fine motor skills, difficulty with handwriting and letter formation, and struggling to get thoughts into a digital forum because typing added an extra layer of complexity. Further research may be needed to examine the effects of the pandemic on the writing abilities of children with ASD.

### **Theme 3: Perceptions of Speaking and Listening Materials and Strategies**

#### **Task Analysis**

In the past, TA was proven to be an EBP to teach literacy and provided structure to students with ASD (Baker et al., 2019). Teachers in the present study reported relying more on TA during the pandemic. The participants said that TA was the most successful strategy during the pandemic for increasing speaking and listening skills. Magnet, Velcro, and dry erase boards for schedules, routines, and tasks were valuable resources to support TA. Video modeling was also perceived as beneficial by students and teachers.

During the targeted time frame, the participants reported regression of students' abilities to achieve multistep commands. Several participants said that the tasks needed to be abbreviated and more time needed to be allotted for successful implementation in an online environment. The support of family members and caregivers was perceived as beneficial. In addition to family support, the use of visual materials also was reported to be valuable in supporting this strategy.

#### **Story Retell**

The strategy of story retelling has been helpful to develop meaning-related skills among students with ASD (Kimhi et al., 2018; Stirling et al., 2017). Previous research revealed the benefits of students with ASD retelling the story by drawing pictures, using visual aids to reenact ideas from the storyline, or orally retelling events from the story (Kimhi et al., 2018). Although students with ASD usually have shorter and less grammatically correct retells, story retelling has been an EBP with ASD students for assessing comprehension and fostering creativity (Stirling et al., 2017).



During the pandemic, some students were not able to use story retell to demonstrate comprehension, and for those students, it was beneficial to begin with a smaller step, such as asking the child about their favorite part of their day. Families could model this strategy at home. Students with higher levels of comfort with story retell used Kami to record videos or submit written retells about the stories they had read. Some teachers positively perceived think-pair-share and peer-to-peer retells as helpful. Stopping after every few paragraphs or pages while providing visual support was also perceived as a positive technique.

#### **Theme 4: Perceptions of Social Skills Materials and Strategies**

Many of the participants stated that social skills were a focus in their traditional brick-and-mortar classrooms. When shifting to an online environment, the participants found creative ways to engage their students in peer-to-peer interaction. The participants shared that the change in environment was difficult for many students with ASD. All 12 of the participants mentioned situations when the students were frustrated. Assessment of self-expression was more difficult during the pandemic. Unlike traditional face-to-face learning that allows for pointing to objects needed, interpretation of body language, and facial cues to assist teachers, learning online and social distancing in a masked environment did not allow for the traditional strategies. The change of environment limited the number of resources students had access to and the amount of movement that could take place while learning.

Some of the teachers perceived breakout rooms and providing digital free time for students to interact as helpful. The participants recommended the use of social stories,

allowing for self-expression during the lessons, and providing a variety of interactive activities for the children. The participants suggested that during future school closings, teachers should communicate with families and teach the caregivers how to use social stories.

### **Theme 5: Perceptions of Technology Materials and Strategies**

The 12 participants were asked an interview question examining the instructional strategies and materials implemented during the pandemic that the teacher had not previously used. Most participants listed online programs and Apps, and all 12 participants said the shift from face-to-face teaching to becoming an online instructor was new to them.

The materials and strategies implemented varied, yet the participants reported similar challenges with the technology used to deliver literacy instruction. The digital divide was a concern to the teachers. Some students did not have access to technology, and for some students with access, there was not a person available to assist. The inequity of support at home was also perceived as a hurdle by several participants. The data also showed that teachers perceived the technology used for online instruction as more difficult for building rapport, assessing body language, and keeping students on task.

The recommendations from participants included using direct instruction for teaching families and children to use the technology. P2 said that having visuals made in advance as reminders to mute the microphone or turn on the camera could be beneficial. Participant 7 said that choosing one platform and sticking with it was helpful for the children. The educators in this study called for family members to have access to

technology and training as well as for a system supplying support for all students while completing their online learning.

### **Theme 6: Perceptions of the Scaffolding for ASD Students During the Pandemic**

The supportive measures for ASD students, often called scaffolding, are the steps used to facilitate the development of a new skill (Grand Canyon University, 2021). Scaffolding is the way teachers provide the needed supports while students develop mastery of a skill (Grand Canyon University, 2021). The participants discussed the scaffolding measures they perceived as helpful for their students during the pandemic.

The first scaffolding strategy reported as beneficial was preparing the home learning environment for the student and keeping it consistent. The participants said that having an area designated for learning in an area with minimal distractions helped the students stay on task. Having the items needed for the learning experience within arms-reach was helpful for students and parents. Setting up the environment also included having a visible schedule displayed for the child. For optimal results, the schedule should be as consistent as possible.

Responses revealed the importance of using a routine and common transitions. The routine helped students acclimate and transition into online learning. The participants said that items such as visual timers and first/then boards positively supported their routines and transitions.

The teachers who worked with families to facilitate or assist in implementing the virtual lessons reported positive results and enjoyable experiences. The benefits of working with the families were discussed by all the participants. The participants

recommended communicating with the families often and teaching the families how to best support their child's literacy learning.

Direct instruction was used by all 12 participants in the study. The shift to the online and hybrid environments made it necessary for more direct instruction. The materials and strategies paired with direct instruction varied amongst the participants, yet it was commonly stated that the direct instruction approaches such as social stories and TA helped the students with ASD.

### **Limitations of the Study**

As described in Chapter 1, there were some limitations to this study. The sample size of the participants was small. The 12 teachers were from the elementary grades and the same midwestern state. Personal biases may be considered a limitation because I am an educator, and my 6-year-old son is on the autism spectrum.

The actions I took to minimize these limitations were being transparent with the participants and using member checking. I disclosed to all participants that I was an educator and had a son with ASD. The sample did not use anyone I had had a previous relationship with nor were my son's educators included. Another measure taken to reduce the limitations of this research was providing a thick description of the data with details so the reader could make judgments. I have also used audit trails to ensure I was following the plan approved by Walden University's IRB.

Reflexivity assisted me with objectivity throughout the research process by knowing myself, my positionality, and my subjectiveness (see Ravitch & Carl, 2016). The reflexivity chart created by Ravitch and Carl (2016) helped me self-assess at each

stage in my research. However, it is still possible that some participants may not have felt comfortable disclosing their challenges or need for additional support during the interviews.

### **Recommendations**

This study examined elementary teachers' perceptions of the instructional materials and strategies utilized during the COVID-19 pandemic to develop literacy skills with students with ASD. The data from this study expanded upon existing research and may lead to future studies examining literacy instruction for ASD students.

The literature review in Chapter 2 illuminated some of the EBPs used for literacy instruction with students with ASD before the pandemic. The data from my research suggested that some of the preexisting EBPs were positively perceived when used in an online or hybrid classroom and others were not. The limited scope of the present study was not enough to generalize teachers' perceptions of the strategies and materials. Further research is needed to extend the findings. Recommendations for future studies include using larger sample sizes, gathering quantitative data, and interviewing teachers from other grade levels.

The underpinnings of my study built upon SDT, because experts have called for SDT research to look closely at how educational media, e-learning, remote classrooms, and technology-enhanced experiences foster engagement and learning (Ryan & Rigby, 2020; Peters et al., 2018). More studies are needed to examine the classroom environment during the pandemic era. The second framework grounding this study was critical multimodal literacy. This study examined teachers' perceptions about the materials and

strategies used to deliver literacy instruction during the pandemic for students with ASD. Understanding that literacy was not defined as reading and writing, but as the ability to use multimodal tools such as drawings, photographs, role-playing, or music to gain deep understandings and display learning (Capello et al., 2019; Huang, 2017; Schroeter & Wager, 2017). The teachers interviewed described the literacy experiences using the modern definition. Future research could explore the teachers' perceptions of the modalities of demonstrating literacy skills during the pandemic.

One of the most common themes among participants was the positive perceptions of family support for online learning. The teachers in this study expressed a need for family support funding and training. When asked what recommendations teachers had for future school closures, they discussed the importance of planning, being flexible, and collaborating with other educators. The participants also expressed the need for all students to have access to the materials they need such as headphones, internet, paper, and other technology-based and traditional materials.

### **Implications**

Social change may be possible by providing research that adds to the existing body of literature, therefore future studies may better empower students with ASD with literacy skills. Literacy skills can improve the likelihood of success in college and careers (Clifton et al., 2017), and reduce limitations on how fully people participate in the workforce, manage healthcare, and function with daily life (Morrow et al., 2019).

Data from this study may help teachers and families as they work with students with ASD during future school closures. Further training of families may result from the

findings in this study. The results may assist administrators with their preparations to meet all students' needs in the event of another school shutdown. The growing Autism community also may benefit from the findings presented in this study by better understanding the challenges faced during online and hybrid instruction.

### **Conclusion**

As a result of this study, it was determined that teachers' perceptions varied about the literacy strategies and tools used with students with ASD during the pandemic. The teachers utilized a wide array of traditional and technology-based strategies and materials to facilitate growth in reading, writing, social skills, and technology. The teachers perceived the level of support from the students' families as an important element of online learning. There was a shift in perceptions of literacy strategies and materials from pre-pandemic data to the findings in this study. Some EBPs from the pre-pandemic era were more challenging to implement in an online forum and others were perceived as beneficial. The evidence from this study suggests that teachers should prepare for future school closures, and schools need to find a way to provide easy access to all learning materials needed. The data also show the need for training of students' families to help support students with ASD as well as maintaining a collaborative relationship.

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## Appendix A: Facebook Posting



Inviting all elementary teachers:

Would you be willing to spend 1-hour of your time participating in an interview to support research in literacy?

My name is Heather Marzenski and I am a doctoral candidate at Walden University. I am conducting research examining teachers' perceptions of the literacy strategies and materials used during the COVID-19 pandemic with children with Autism Spectrum Disorder. If you meet the criteria below and would like to participate, please [click here](#). I will schedule the individual interviews to meet your scheduling needs and conduct them via Zoom.

Criteria needed for participation:

- (a) The teacher instructs children in Grades K to 5
  - (b) the teacher provides literacy instruction
  - (c) the teacher was employed by a public school during the pandemic from May 2020 through March 2021
  - (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD
  - (e) the teacher was teaching from a midwestern state during the pandemic.
- There will not be any compensation for this study.

Thank you,

Heather Marzenski

heather.marzenski@waldenu.edu


Doctoral Candidate at Walden University

(image from Kind PNG (2021) [https://www.kindpng.com/imgv/TThoJmT\\_autism-handprint-png-download-autism-spectrum-disorder-puzzle/](https://www.kindpng.com/imgv/TThoJmT_autism-handprint-png-download-autism-spectrum-disorder-puzzle/))

## Appendix B: Google Form

## Research Study: Examining the Teachers' Perceptions of the Literacy Materials & Strategies used during the COVID-19 Pandemic among Students with ASD

CREATED BY: DOCTORAL CANDIDATE, HEATHER MARZENSKI  
This form does not indicate consent but is intended to show an interest in participating in the study.

[hmarzens@bw.edu](mailto:hmarzens@bw.edu) [Switch account](#) 

\* Required

Email \*

Your email

Your Name \*

Your answer



Do you meet ALL of the following criteria? (a) the teacher instructs children in grades K-5 (b) the teacher provides literacy instruction (c) the teacher was employed by a public school during the pandemic from March 2020 through March 2021 (d) during the pandemic, the teacher worked with at least one student who was diagnosed with ASD and (e) the teacher was teaching from a midwestern state during the pandemic. \*

Yes

No

Would you consider the school you taught at during the pandemic as: \*

rural

suburban

urban

other: please explain

Do you teach in a midwestern state?

yes

no

**Submit**

[Clear form](#)

## Appendix C: Interview Questions

### Background Information Questions

1. Would you classify the school you were employed with during the 2020-21 school year as urban, rural, or suburban?
2. What grade(s) did you teach during the 2020-21 school year?
3. Was your instruction provided online, on campus, or in a hybrid format?

### Semistructured Interview Questions

1. What literacy instructional strategies did you use amongst your autistic students during the COVID-19 pandemic?
2. What are your perceptions of these literacy instructional strategies when used with students with ASD during the pandemic?
3. What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?

shared reading

story retelling

dialogic reading

providing authentic opportunities to include literacy

think-aloud

narrative writing

Task Analysis (TA)

Read-aloud

4. What, if any, instructional strategies did you implement during the pandemic that you have not previously used with ASD students before the pandemic?
5. What literacy instructional materials did you use amongst your autistic students during the COVID-19 pandemic?
6. What are your perceptions of these literacy instructional materials when used with students with ASD during the pandemic?
7. What are your perceptions of using visual materials and AAC devices when teaching literacy during the pandemic?
8. What, if any, instructional materials did you implement during the pandemic that you have not previously used with ASD students before the pandemic?
9. Are there any strategies or materials you would recommend using during future school closures for elementary students with ASD to help develop literacy skills?

## Appendix D: First Cycle Coding

Semistructured interview question	Initial Codes	
What literacy materials and strategies did you use amongst your students with ASD during the COVID-19 pandemic?	<ul style="list-style-type: none"> <li>• "Alternate modes of communication for nonverbal students"</li> <li>• "Basel Reader"</li> <li>• "Breakout rooms"</li> <li>• "Changing the environment"</li> <li>• "Chapter books"</li> <li>• "Computer programs/Apps"</li> <li>• "Direct instruction"</li> <li>• "Easter Seals School Closure Kit"</li> <li>• "Elkonin/ Sound boxes"</li> <li>• "<i>Fundations</i>"</li> <li>• "Google Slides"</li> <li>• "<i>Heggerty</i>"</li> <li>• "Highlighting"</li> <li>• "<i>HMH Into Reading</i>"</li> <li>• "Interactive activities"</li> <li>• "Jamboard"</li> <li>• "journaling"</li> <li>• "Lucy Caulkins"</li> <li>• "Peer to peer"</li> <li>• "Prewriting"</li> </ul>	<ul style="list-style-type: none"> <li>• "Read- aloud"</li> <li>• "Reading A-Z"</li> <li>• "Reading packets"</li> <li>• "<i>Reading Street</i>"</li> <li>• "Routines"</li> <li>• "<i>Scholastic News</i>"</li> <li>• "Schoology"</li> <li>• "Self-expression"</li> <li>• "Sentence Starters"</li> <li>• "Social Stories"</li> <li>• "Story retell"</li> <li>• "<i>Story Works</i>"</li> <li>• "Tactile Techniques"</li> <li>• "Teach the parents"</li> <li>• "Videos"</li> <li>• "Virtual Lunch (peer to peer)"</li> <li>• "<i>Wonders</i>"</li> <li>• "Writing on the lines"</li> </ul>
What are your perceptions of these literacy instructional materials and strategies when used with students with ASD during the pandemic?	<ul style="list-style-type: none"> <li>• "Did not use at all"</li> <li>• "Did not use online"</li> <li>• "Did not use at all during the pandemic"</li> <li>• "Used the strategy or material but students found it too challenging"</li> <li>• "The students did not have the attention span to utilize the material or strategy"</li> </ul>	<ul style="list-style-type: none"> <li>• "This material or strategy needed to be modified during the pandemic"</li> <li>• "The material or strategy was not as effective for online or hybrid learning"</li> <li>• "Students liked this"</li> <li>• "Students loved this"</li> <li>• "The teacher enjoyed using the material or strategy"</li> </ul>

	<ul style="list-style-type: none"> <li>• "Not everyone had access to this"</li> <li>• "Used the strategy or material but the teacher found it too challenging"</li> </ul>	<ul style="list-style-type: none"> <li>• "Students were able to successfully learn online with support"</li> <li>• "Students were able to learn from each other"</li> <li>• "Behavior management"</li> </ul>
<p><u>Shared Reading:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD</p>	<ul style="list-style-type: none"> <li>• "Access to texts"</li> <li>• "Adjust the pace"</li> <li>• "Adjust your intonation"</li> <li>• "Breakout rooms help"</li> <li>• "Calming"</li> <li>• "Cannot do online or hybrid"</li> <li>• "Difficult online"</li> <li>• "E-texts"</li> <li>• "Family to student"</li> <li>• "Guest readers"</li> <li>• "Highlight"</li> <li>• "Less attention"</li> <li>• "More difficult "</li> <li>• "Mystery Reader"</li> <li>• "No carpet time online"</li> </ul>	<ul style="list-style-type: none"> <li>• "No sharing of materials"</li> <li>• "No small groups"</li> <li>• "Not holding up the book to screen"</li> <li>• "Participatory"</li> <li>• "Peer to peer"</li> <li>• "Prerecorded"</li> <li>• "Reading A-Z"</li> <li>• "Reading Buddies: peers, stuffed animals, family members"</li> <li>• "Shorter time frame"</li> <li>• "Sometimes need to change the environment for this strategy: read to the child in the bathtub"</li> <li>• "Stories of interest"</li> <li>• "Story Works"</li> <li>• "Students need to be able to track the text"</li> <li>• "Teacher to student"</li> <li>• "Use repetitive books"</li> </ul>
<p><u>Story Retell:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?</p>	<ul style="list-style-type: none"> <li>• "Google Doc"</li> <li>• "Google Forms"</li> <li>• "Graphic Organizers"</li> <li>• "Guided Reading"</li> <li>• "Harder online"</li> <li>• "Map it out visually"</li> <li>• "Model"</li> <li>• "My students cannot yet complete this strategy"</li> <li>• "Jamboard"</li> </ul>	<ul style="list-style-type: none"> <li>• "Prompted"</li> <li>• "Quiz"</li> <li>• "Same as before COVID"</li> <li>• "Small chunks"</li> <li>• "Students need a scaffolded approach: What was your favorite part of the day?"</li> <li>• "T.A."</li> <li>• "Talk it through"</li> <li>• "Think-Pair-Share"</li> </ul>
<p><u>Dialogic Reading:</u> What are your perceptions of</p>	<ul style="list-style-type: none"> <li>• "Attention span online was not high enough to do this"</li> <li>• "Only used in person"</li> <li>• "Too challenging to do online"</li> <li>• "Used Kami and notations on PDFs online"</li> </ul>	

<hr/> using the following EBPs during the pandemic with elementary students with ASD?	<ul style="list-style-type: none"> <li>• "Used Story Works and Post It Notes in person"</li> <li>• "verbal"</li> <li>• "written"</li> </ul>	
<hr/> <u>Authentic Experiences:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?	<ul style="list-style-type: none"> <li>• "1-on-1 learning"</li> <li>• "Cross-curricular opportunities"</li> <li>• "Embedded in the curriculum"</li> <li>• "No"</li> <li>• "Not online"</li> </ul>	<ul style="list-style-type: none"> <li>• "Project-based learning (PBL): creating cartoons, video games, etc"</li> <li>• "Real world connections"</li> <li>• "Social Studies magazines"</li> <li>• "Technology-based experiences: note-taking pen, recording pen, narrated e-texts, sign language books, online texts in all languages"</li> <li>• "Using authentic materials &amp; resources"</li> </ul>
<hr/> <u>Think Aloud:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?	<ul style="list-style-type: none"> <li>• "Difficult during the pandemic"</li> <li>• "Finding materials"</li> <li>• "For homework"</li> <li>• "In-person, yes"</li> <li>• "Instructions"</li> <li>• "More during the pandemic"</li> <li>• "No "</li> <li>• "Online no"</li> </ul>	<ul style="list-style-type: none"> <li>• "Prelesson dialogue"</li> <li>• "Smaller steps were needed and more support during the pandemic"</li> <li>• "T.A. usage increased during the pandemic"</li> <li>• "Technology support"</li> <li>• "Too difficult to do online"</li> <li>• "With families"</li> <li>• "With students"</li> </ul>
<hr/> <u>Narrative Writing:</u> What are your perceptions of using the following EBPs during the pandemic with elementary	<ul style="list-style-type: none"> <li>• "Choice of the topic"</li> <li>• "Challenging"</li> <li>• "Concept mapping"</li> <li>• "Discussions about writing"</li> <li>• "Draw/illustrate"</li> <li>• "Executive functioning"</li> <li>• "Family support"</li> <li>• "Fell behind"</li> <li>• "Graphic organizers"</li> </ul>	<ul style="list-style-type: none"> <li>• "Model"</li> <li>• "More direct instruction"</li> <li>• "Not during the pandemic"</li> <li>• "Piece by piece"</li> <li>• "Prompting"</li> <li>• "Sentence starter"</li> <li>• "Structured"</li> <li>• "Students are not yet able to do this"</li> </ul> <hr/>

students with ASD?	<ul style="list-style-type: none"> <li>• "Jamboard"</li> <li>• "Journal"</li> <li>• "Less conferencing"</li> <li>• "Literature circles"</li> </ul>	<ul style="list-style-type: none"> <li>• "Took longer than usual"</li> <li>• "Typing not writing"</li> <li>• "Very effective"</li> <li>• "Youtube instructed"</li> </ul>
<u>Task Analysis:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?	<ul style="list-style-type: none"> <li>• "Before the pandemic"</li> <li>• "Checklists"</li> <li>• "Condensed"</li> <li>• "Dry erase"</li> <li>• "During the pandemic"</li> <li>• "Family support"</li> <li>• "More difficult online"</li> <li>• "More needed during COVID"</li> <li>• "Multi-step"</li> <li>• "Simplified"</li> <li>• "Technology-centered lessons"</li> <li>• "Written"</li> </ul>	
<u>Read-Aloud:</u> What are your perceptions of using the following EBPs during the pandemic with elementary students with ASD?	<ul style="list-style-type: none"> <li>• "Carpet time has gone"</li> <li>• "Change of environment"</li> <li>• "Digitally narrated"</li> <li>• "Family support"</li> <li>• "In a different way"</li> <li>• "Less attention"</li> <li>• "More challenging online"</li> <li>• "No "</li> <li>• "Not online"</li> <li>• "Pause &amp; ask questions"</li> <li>• "Teacher reads"</li> <li>• "Voice, intonation, pacing can be modeled by the teacher"</li> </ul>	
What, if any, instructional strategies and materials did you implement during the pandemic that you have not previously used with ASD students before the pandemic?	<ul style="list-style-type: none"> <li>• "Chat/discussion boards"</li> <li>• "Floreo"</li> <li>• "Intensive schedules"</li> <li>• "Jamboard"</li> <li>• "Kami"</li> <li>• "Materials stayed the same"</li> <li>• "More working with families"</li> <li>• "Nearpod"</li> <li>• "New grouping strategies"</li> <li>• "New technology/Apps"</li> <li>• "No longer having 1 on 1"</li> </ul>	<ul style="list-style-type: none"> <li>• "No new materials/strategies "</li> <li>• "Online teaching"</li> <li>• "Pear Deck"</li> <li>• "See-Saw"</li> <li>• "The way we taught was different, but the content was the same"</li> <li>• "Therapy was ongoing"</li> <li>• "Using a doc cam for online instruction"</li> <li>• "Video modeling"</li> <li>• "Virtual tasks"</li> <li>• "Workstation from home"</li> <li>• "Zoom"</li> </ul>

<p>Are there any strategies or materials you would recommend using during future school closures for elementary students with ASD to help develop literacy skills?</p>	<ul style="list-style-type: none"> <li>• "BitMoji"</li> <li>• "Breakout rooms"</li> <li>• "Breaks"</li> <li>• "Choices"</li> <li>• "Class Do Jo"</li> <li>• "Collaborate"</li> <li>• "Consistency"</li> <li>• "Family support"</li> <li>• "Google Classroom"</li> <li>• "Google Meet"</li> <li>• "'How-to' videos"</li> <li>• "Jamboard"</li> <li>• "Kami"</li> <li>• "Materials for all: Chromebooks, headphones"</li> <li>• "Model"</li> <li>• "Movement"</li> <li>• "NearPod"</li> </ul>	<ul style="list-style-type: none"> <li>• "Nobody picks of packets from school"</li> <li>• "Online programs &amp; Apps"</li> <li>• "Other teachers"</li> <li>• "Project-Based Learning"</li> <li>• "Peer to peer"</li> <li>• "Prep in advance"</li> <li>• "See Saw"</li> <li>• "share resources "</li> <li>• "simplify instructions"</li> <li>• "Smartboard"</li> <li>• "Teachers Pay Teachers"</li> <li>• "Tech training"</li> <li>• "traditional posters, drawings, art"</li> <li>• "trial and error"</li> <li>• "varied resources"</li> <li>• "YouTube"</li> </ul>
<p>Other codes that emerged during the first round that were not directly related to the interview questions.</p>	<ul style="list-style-type: none"> <li>• "Attendance /participation"</li> <li>• "Behavior, classroom management &amp; meltdowns"</li> <li>• "Better technology skills"</li> <li>• "Children turned off the computer when frustrated"</li> <li>• "Collaboration"</li> <li>• "Community building/gaining support"</li> <li>• "Conferencing"</li> <li>• "Dress up like favorites characters"</li> <li>• "Feedback"</li> <li>• "Fine motor skills"</li> <li>• "Handwriting"</li> <li>• "Home environment"</li> <li>• "Love teaching"</li> <li>• "Organization, color coding"</li> <li>• "Parents doing work for them"</li> <li>• "Proximity"</li> </ul>	<ul style="list-style-type: none"> <li>• "Reading themes across the content areas"</li> <li>• "Reading week"</li> <li>• "Regression"</li> <li>• "Relationships"</li> <li>• "Screen time"</li> <li>• "Social skills"</li> <li>• "Standardized testing"</li> <li>• "Stress/overwhelmed"</li> <li>• "Supplies"</li> <li>• "Support services"</li> <li>• "Teaching children to use the camera, mute, technology"</li> <li>• "Teaching families to use technology"</li> <li>• "Teaching spelling is more difficult"</li> <li>• "Wear a mask"</li> <li>• "Webinars, professional development"</li> <li>• "Work/life balance"</li> </ul>



- 
- "Pulled in different directions"
  - "Read outside"
- 
-