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Teacher's Perspectives of Integrated Therapy Service Deliveries: A Case Study

Vidya Pingale, MS, PhD, OTR
Hofstra University

Tina S. Fletcher, EdD, MFA, OTR
Texas Woman's University

Abstract

This qualitative case study explored an elementary school teacher's perspectives of integrated therapy service deliveries (ITSD) using a semi-structured interview. An inductive emergent sampling was used to select the participant from an urban school district. A grounded theory approach was used to analyze the data and understand the teacher's perspectives of ITSD within their personal, social, cultural, and environmental contexts. Analysis revealed teacher's perspectives of ITSD, dynamic trajectories of ITSD, and interdependence as themes. The teacher's perspectives of ITSD were influenced by the impact of ITSD on the classroom and the teacher's sense of control in the classroom. Trajectories of ITSD were shaped by variations in the implementation process, presence of catalysts, and integration into the classroom. Interdependence was seen between trajectories of ITSD and teacher's perspectives. Overall, the teacher viewed ITSD as beneficial, and their perspectives were crucial for the success of ITSD.

Teacher's Perspectives of Integrated Therapy Services: A Case Study

In the United States, approximately 14 % of children attending public schools receive special education services under the Individuals with Disabilities Education Act (IDEA) (National Center for Education Statistics, 2021). Under IDEA, children with disabilities are eligible to receive related services to promote their participation in learning activities. These services can range from speech-language therapy, physical therapy, occupational therapy to counseling. Delivery of these therapy services falls on the continuum of pull-out to integrated service delivery models (McWilliams, 2010; McWilliams & Sekerak, 1995; Wolery & McWilliam 1998). Delivery of related services can be categorized based on intervention type, goal, location of the service, and level of collaboration with the classroom teacher. Pull-out service delivery refers to the provision of direct service out of the classroom. On the contrary, the integrated services delivery model is inclusive. The concept of integrated therapy service deliveries (ITSD) has evolved in the past decade. Currently, ITSD constitutes transdisciplinary planning and implementation of services, such as providing services or strategies to use in the classroom, consulting, assessing, planning, and reporting to achieve the common goals of facilitating participation in educational activities (Bazyk et al., 2009; McWilliams & Sekerak, 1995; McWilliams & Bailey, 1994; Nolan et al, 2004). For this study, the researcher explored two teachers' perspectives of integrated service deliveries of occupational therapy and speech-language therapy services as only these services were integrated into the school. Services were delivered within the classroom with or without involving all students in the classroom, consultations with the teacher, and incorporation of tools or strategies during classroom instructions as per the recommendations of related service professionals were considered integrated forms of the services delivery.

Benefits of ITSD

Research on the benefits of ITSD over the pull-out services is limited (Cirrin et al., 2010). However, literature reports frequent exposure to the intervention, opportunities for generalization of skills in natural settings (Truong & Hodgetts, 2016; Turan, 2012), and unaffected instruction time (Dawson, 2014; Campbell et al., 2014; Zigmond, 2003) as some of the benefits of ITSD. Improvements in interpersonal skills, behavior management, adjustment to change (Olegman & Seçer, 2012; Rea et al., 2002), and academic achievement (Bazyk et al., 2009; Rea et al.,2012) were also reported with inclusive educational models. Similarly, positive changes in visual-motor, fine-motor, and gross-motor skills are reported with ITSD (Bellows, et al., 2013; Ohl, et al., 2013). When handwriting programs were delivered collaboratively by teachers, special educators, and occupational therapists, first-grade students showed significant improvements in handwriting legibility and speed compared to the standard handwriting program (Case-Smith et al., 2014). Similarly, Lust and Donica (2011) found significant improvement in prewriting, school readiness, and fine motor skills with a handwriting readiness program that was delivered in collaboration with the teacher compared to the typical handwriting program used in the classroom. Bazyk et al. (2009) also reported significant improvements in fine motor and emergent literacy outcomes in children with and without disabilities after seven months of occupational therapy services integrated within the classroom. Gains in language-related skills were also reported with ITSD in comparison to pull-out service delivery (Gillam et al., 2014; Spencer et al., 2015; Rafferty et al., 2013). Integrative services also have a positive effect on teacher-therapist interactions, teacher attitude, teacher's understanding of the intervention, and therapist's role and acceptance of intervention (Turan, 2012).

Current Use of ITSD

Past research on ITSD is focused primarily on understanding therapist-related factors influencing the choice of service delivery. Lack of training (Bradenburger-Shasby, 2005) and therapists' inexperience in providing consultative services in the natural contexts (Hanft & Pilkington 2000) can impact the quality of integrated services. Additionally, literature shows that the lack of awareness of the potential benefits of integrated services and support for related service staff limit the use of ITSD. Student needs, caseload, environmental and institutional factors, teacher-therapist training (Brandel & Loeb, 2011; Green 2019; McWilliams & Bailey, 1994; Nolan et al., 2004; Watt et al., 2021), and therapist-teacher relationship (Watt et al., 2021) often influence the selection of service delivery model in school settings.

Although there is a consensus among teachers and therapists on the benefits of ITSD (Benson et al., 2016; Case-Smith & Holland, 2009), ITSD delivery continues to face barriers (Mullen & Schooling, 2010, Watt et al., 2021). Only 24-50 % of occupational and physical therapists (Barnes & Turner, 2001; Nolan et al., 2004) and 45% of speech and language pathologists used integrated therapy services (Green et Al., 2019). With the reauthorization of the IDEA in 2004, the provision of education in the least restricted environment and collaboration among the professionals is emphasized. As a result, related service providers are expected to work in collaboration with teachers and use integrated therapy service delivery model to achieve the common goal of achieving academic participation for the child (Case-Smith & Holland, 2009; Hong, 2014; Nochajski, 2002; Ryndak et al., 2014; Villeneuve & Hutchinson, 2012). However, working in collaboration can be challenging.

Collaboration with teachers is central to the success of integrated services. (Case-Smith & Holland, 2009; Bradenburger-Shasby, 2005). Collaboration involves engagement in an interactive process, mutual decisions making, and acting towards a common goal (Domitrovich et al., 2010). Collaborative goals setting, determination of collaborative fit, identification and sharing resources, and exchanging and evaluating ideas as crucial elements of the collaborative process (D'Amour et al., 2005). Also, an individual's contribution to the collaborative relationship depends upon possible benefits of collaboration and involves continuous negotiations to optimize benefits and reduce risks to ensure fairness. ITSD requires sharing of resources such as space and time with other professionals and adapting to their instructional methods. Since the effectiveness of these interventions is contingent on teacher-therapist collaboration, understanding the teacher's perspectives of ITSD will be valuable for their success.

Investigator's Perspective

As an occupational therapist, I have been providing occupational therapy services to children with disabilities in public and private school settings for more than 20 years. I provide occupational therapy services on the continuum of pull-out to ITSD to address students' needs. The experience and outcomes of ITSD across the schools and classrooms are variable. The current socio-political environment in occupational therapy practice and education calls for integrative therapy services. Therapists and teachers face various degrees and types of challenges when using ITSD. Therapists are required to educate, delegate, and trust other professionals to deliver the services to children. Of them, teachers play a key role in the ITSD. Their preference or dislike of ITSD can have a significant impact on the experience and outcome of ITSD. Therefore, understanding teachers' perspectives of ITSD and the factors that influence their perspectives will benefit related service professionals, teachers, and administrators.

Methods

Research Design

This qualitative case study was conducted to explore elementary grade teacher's perspectives of ITSD. A case study method is used as a preliminary method of inquiry when the research on the topic is limited (Cresswell, 2017). This method allows in-depth exploration of various aspects of the object, phenomenon, event, or individual. Since research on how teachers perceive ITSD is limited, a case study method was used to get a broad understanding of teacher's perspectives of the ITSD. In this study, one teacher's perspectives of ITSD were explored.

Research questions

The main research question that guided this study was "How do elementary grade teachers perceive ITSD for children with special needs?" Subsidiary questions included, "What are perceived benefits and challenges of ITSD and how ITSD impact the teacher's ability to manage a classroom or teaching, a child who receives the intervention, and other children in the classroom?" The study also focused on understanding the barriers to implementing integrated therapy services for children with special needs.

Research Context

The study was conducted in an urban public school. This school serves typical children and children with special needs attending pre-kindergarten through 8th grades. The school has five special education classes, an occupational therapist, a part-time physical therapist, a clinical psychologist, two licensed social workers, two speech therapists, and a consulting board-certified behavioral analyst. Permission was obtained from the head of the special education department to interview special education teachers to gather information about their perspectives on ITSD. The recruited teacher signed informed consent prior to the interview.

Recruitment

The inductive grounded and emergent sampling was used to choose a participant from a pool of five special education teachers. The participant was selected based on the information collected from a school survey about teacher's work experiences, their familiarity with ITSD, and brief perspectives on ITSD. The participant for the case study was selected because of their 17 years of experience in various schools and classroom settings.

Participant Context

During their 17 years of educational experience, the selected teacher taught general education and special education classes ranging from kindergarten to 5th grade across public, private, and charter schools. They also had experience working with a range of related service providers using various service delivery models. In the current school, They worked for five years as a special education teacher. At the time of the study, They taught Learning and Language Disabled (LLD): Level I class which consisting of four students. The LLD: Level I curriculum teaches kindergarten, first grade, and second-grade level competencies. All children in the classroom received related services along the continuum of pull-out, push-in to consultative services.

Data Collection and Analysis

The data were collected with an in-depth semi-structured interview and observation of one teacher in a classroom using a participant observation method. The analysis was based on the assumption that individual's perceptions are embedded in their personal, social, cultural, and environmental contexts within which the phenomenon occurs (Ravitch & Carl, 2019). Interactions and interpretation of the actions within these contexts shape individual's values, beliefs, thoughts and influence their actions. Since a case study method was used for this research understanding the perspectives within personal, social, cultural, and environmental contexts was imperative. Grounded theory analysis uses an inductive analytical approach to understand the process contributing or leading to a phenomenon within the ITSD context. The method involves analyzing data to identify underlying uniformities and differences to develop concepts and themes finding possible interactions among them. Therefore, the grounded theory approach proposed by Corbin and Strauss (2014) was used to analyze teacher's perspectives of ITSD, factors influencing their perspectives, and interrelationship among various components influencing the teacher's perspectives of ITSD.

First, raw data from the interview transcript was transcribed. The initial coding began after reading the entire interview transcript two times. Data were then deconstructed line by line, and codes were assigned to the concepts and processes that these lines represented. Once the entire

document was coded, it was reviewed again with an intention to converge or diverge data using a logical analysis matrix (Patton, 2015). During this process, dimensions for each category were identified, and the axial coding procedure was used to detect relationships among categories. This process was followed by identifying selective themes that were then verified against the quotes from the teacher, open codes, and participant observation field notes. The data at this stage were reorganized several times to verify original themes and to identify emergent themes.

Trustworthiness

The first author and another occupational therapist analyzed the interview transcript independently and identified common themes of factors influencing the teacher's perspectives. Categories from both researchers were compared and merged. In addition, these categories were verified against school survey responses and participant observation data. Similar to the findings of the interview analysis, survey participants acknowledged the benefits of ITSD. Additionally, the survey findings showed the teacher's sense of control and availability of support influenced the implementation of ITSD in classrooms. The importance of the teacher's sense of control is evident in the response, "...use of picture boards in my classroom has been the most difficult due to the class size and enormous amount of one-to-one each student requires..."

Similarly, during participant observation, one of the students carried a cushion that he used as a part of integrated therapy without any reminders when he moved from one table to the other. This child's actions show acceptance of the intervention strategy by the child as the cushion became an extension of him. Similarly, the teacher's lack of reaction to the child waving his cushion during a classroom activity shows that the child's action did not affect the teacher's sense of control. As long as the teacher's sense of control was intact, the intervention strategy was not seen as a disruption in a classroom. The primary investigator reviewed themes with the teacher for validation.

Results

The analysis revealed three themes: teacher's perspectives of ITSD, trajectories of ITSD, and interdependence.

Teacher's Perspectives of ITSD

Overall, the teacher found ITSD beneficial. The teacher's perspectives of ITSD were influenced by the impact of ITSD on the classroom and their sense of control in the classroom. The teacher viewed the impact of ITSD through the lens of cost and benefit of ITSD, child's needs in the classroom, child's response to ITSD, and teacher's expectations of the child. The cost and benefit of ITSD had a considerable influence on the appraisal of the impact of ITSD. The following responses reflect the teacher's assessment of the impact of ITSD, "But I *think* [emphasis added] overall, the interventions help rather than letting the kid sit in the classroom and not have anything to make things better" and "it is better than them standing and running around the room. It is less of a distraction".

Cooperative behaviors, emotional regulation, improved attention, task completion, and cooperative behaviors were viewed as some of the benefits. On the contrary, classroom disruptions and off-task behaviors were identified as the cost of ITSD.

The teacher's sense of control in the classroom also influenced the perspectives of ITSD. The sense of control depended on their ability to negotiate classroom demands. A combination of personal context, available supports, and classroom dynamics shaped their sense of control. Teacher's experience, knowledge of intervention strategies, and a repertoire of classroom management strategies constituted the personal context. Supports included time, finances, availability of equipment, tools, and classroom aides. Support in the environment helped the teacher negotiate classroom demands and fostering a sense of control. The following responses indicate the influence of classroom demands on the teacher's sense of control and perspectives of ITSD:

> *I think it is harder in a larger class when you have to be responsible for everyone and that you want something to work for these one or two children, you know so that the rest of them can benefit because you are moving at a faster pace.*

In contrast, the teacher's response, "*I have been teaching for a long time. So, I feel like a newer teacher might not know how to do all these things*" indicates that the teacher's experience, knowledge, repertoire of strategies, ability to mobilize resources helped the teacher to negotiate classroom demands and promoted the sense of control in the classroom. Classroom dynamics also influenced the teacher's sense of control. The physical structure of the classroom, goals for the children, classroom classification, grade level, pace of teaching, flexibility in schedule, and curriculum contributed to classroom dynamics.

Essentially, the sense of control resulted from the teacher's ability to counterbalance the demands of the classroom using available support, knowledge, and experience. The teacher's response, "It is easier in self-contained special ed. [special education] classroom [pause] because it is typical that you have these things going on" reflects this interaction.

Trajectories of the ITSD

Trajectories of ITSD were shaped by the individuality of the implementation process, catalysts, and integration into the classroom. The trajectory began with the implementation of ITSD and ended with or without true integration in the classroom. The implementation process depended on the child's needs, classroom dynamics, and the nature of ITSD. Ongoing assessment of the impact of ITSD was a part of this trajectory. Trajectories were distinct for each child and situation as reflected in the following responses:

> *Obviously, every child is different, so one thing that works for one kid is not gonna work for another. Even in the different parts of the day, something that works in the morning that might not work in the afternoon or seasonally or… It's always trial and error. Of course, if you give them a koosh ball and you think they can get their energy out, and they start playing with it. Then you realize, very quickly, that it is not going to work. Then the conversation with the child is that this is to help you, if it becomes a toy then we cannot have this anymore, and we will have to do something different.*

Integration into the classroom depended on acceptance or rejection of ITSD by the teacher, child who received ITSD, and other children in the classroom. When strategies, tools, or related service providers were viewed as a part of the classroom routine or classroom environment,

interventions were not only considered accepted and but truly integrated. As reflected in the following statement, children's acceptance or rejection of ITSD also influenced the teacher's viewpoint about ITSD.

This theme is reflected in the following response. "*I think they enjoy it. A: It is helping them. B: It is usually something fun, something colorful, something fun, something different. If they ever felt bad about we would probably choose. Whatever that is*…"

Catalysts also influenced the trajectories of ITSD. Catalysts included the teacher's understanding of ITSD, educating the teacher and children about ITSD, collaborative problem solving, and ongoing communication between therapist, teacher, and children. The teacher's following response provides evidence of the role of catalysts on the implementation and integration of therapy services:

> *We can sit around and talk about this kind of thing and get more ideas. Like, have you present and someone else present to tell us more ways to help the things that you are doing in OT [occupational therapy]. We don't have a common planning time. So, we talk when you drop and pick up the kids. But it is very hard to sit and discuss. Like we have done this today or try this one in the class.*

Interdependence

Interdependence of these themes and their components was evident in the responses reflecting the if-then relationship between ITSD, integration of therapy services (tools, strategies, or providers), and teacher's willingness to collaborate. Trajectories of ITSD and the teacher's perspectives of ITSD influenced each other. Teacher's perspectives influenced the implementation process and consequently, the integration of therapy services in the classrooms. Conversely, the integration of therapy services in the classroom led to positive perspectives of tools, strategies, or providers. The evidence of this interdependence is evident throughout the interview. The teacher's comment, "I mean, if it is available, easier, I think most people tend to use it" summarizes the nature of interdependence.

Visual Model

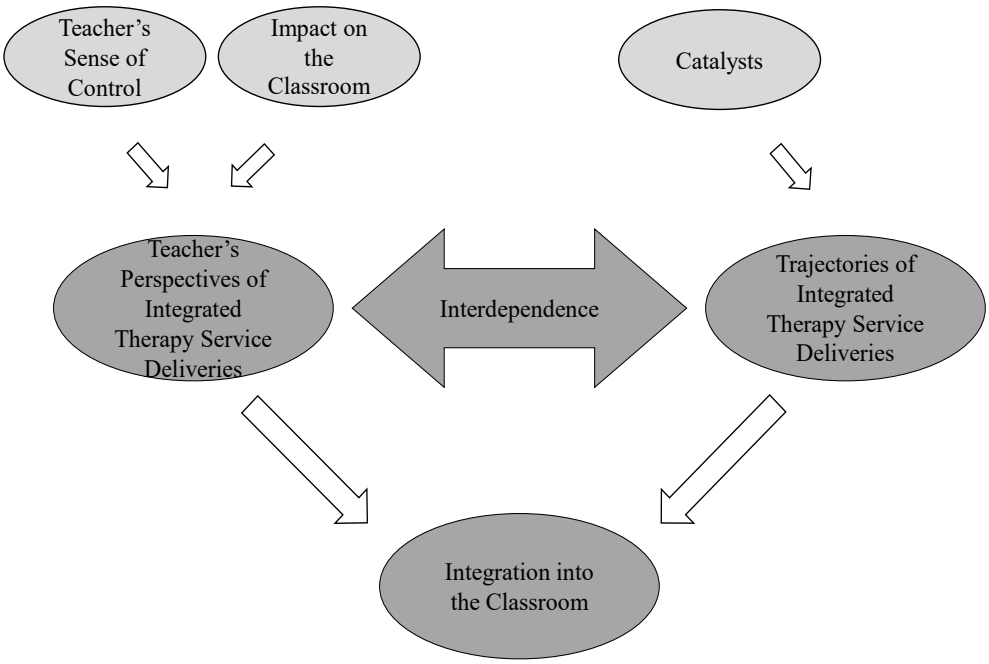

Figure 1. Visual model. This figure shows the visual representation of the interdependence between teachers' perspectives and trajectories of ITSD.

Based on the findings of the study, a visual model was developed (See Figure 1). This model conceptualizes teacher's perspectives of ITSD and trajectories of ITSD as an interdependent process. Positive perception of interventions is likely to facilitate the integration of the interventions in the classroom and the true integration of therapies into the classroom is likely to have a positive influence on the teacher's perspective. The distinctness of ITSD trajectories and level of integration results from variations in implementation processes, impact on the classroom, presence of catalysts, and teacher's perspectives of ITSD. Catalysts and teacher's perspectives of ITSD support the integration of therapy services into the classroom. The teacher's perspectives of the ITSD are influenced by the impact of ITSD on the classroom and the teacher's sense of control.

Discussion

This study was conducted to understand one teacher's perspectives of ITSD. Results suggest that the teacher's perspectives of ITSD are crucial for the successful integration of therapies in the classroom. Trajectories of ITSD also influenced the teacher's perspectives. These trajectories were distinct for each child and situation. The teacher's sense of control and the impact of ITSD on the classroom also influenced the teacher's perspectives. Children in the classroom also played an important role in the success of ITSD. Similar to this study, Turan (2012) reported that children's needs and their responses to intervention influenced the acceptance of therapy services in the classroom.

The teacher viewed the impact of ITSD through the ongoing cost-benefit analysis and was dependent on the child's needs, expectations from the child, and the child's response to ITSD. Ongoing cost-benefit analysis is viewed as an underlying component of a collaborative relationship (D'Amour, 2005). Related service providers can increase the benefits through the use of catalysts which can shape the trajectories of ITSD. Catalysts include an explanation of the rationale for using ITSD to the teacher or children in the classroom, ongoing teacher-therapist communication, and collaborative problem-solving. Brandon and Loeb (2011) also highlighted the role of teacher training on understanding benefits, rationale, and consequently use of integrated service delivery model.

Consistent with the previous literature (Olegman & Seçer, 2012; Truong & Hodgetts, 2016;), the teacher viewed ITSD as primarily beneficial. The teacher's perspectives of ITSD and ITSD benefits ranged from managing children's behaviors to improving participation in classroom activities. Similarly, lack of supports and teacher training was viewed as barriers to integrating therapy services (Brandel & Loeb 2011; Green et al., 2019; Nolan et al., 2004; Watt et al., 2021). Other factors that limited the ITSD included finances, classroom demands, misalignment with the teacher's goals, and disruptions in the classroom.

The findings of this study are important for related service professionals, teachers, as well as researchers. The importance of collaborating with a teacher for positive outcomes of ITSD is acknowledged in the literature (Nochajski, 2002). Teachers are the decision-makers in the classroom. The understanding of factors contributing to teacher's perspectives of ITSD can help related service professionals address the areas that would enhance the experience of ITSD. These factors also provide teachers insight into areas that need to be supported. While the understanding of teacher's perspectives of ITSD is crucial for successful integration of interventions, it is important to remember that related service professionals' attitude, their experience, and preference towards ITSD also influence the outcome of ITSD (Case-Smith & Cable, 1996). Findings from this study have implications for teachers, related service professionals, and administrators. Although further research in this area is needed, stakeholders can use the findings of the study to identify factors that influence the integration of services in their settings and develop strategies for the successful use of ITSD.

This study is a qualitative case study. Although data were triangulated with participant observation and survey, the findings represent the perspectives of the teacher within their personal, social, cultural, and environmental contexts; therefore, the results cannot be generalized. A further study with a larger sample is needed to substantiate the finding of this study and get a richer understanding of the teacher's perspectives of ITSD.

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About the Authors

Dr. Vidya Pingale is an assistant professor of occupational therapy at Hofstra University. She has more than 20 years of experience providing occupational therapy services to children with disabilities across various settings, including early intervention, hospitals, and public schools. Her interests include inclusion and service delivery of related services, living with a child with disabilities, evidence-based practice, and sensory-based intervention in school settings. She has a Ph.D. in occupational therapy.

Dr. Tina S. Fletcher is a professor of occupational therapy at Texas Woman's University. She focuses on improving participation in communities and schools for visitors with differing abilities using sensory strategies, environmental supports, and curriculum development. She was a public school related services provider for 27 years and has an EdD in educational design and curriculum instruction. See her work at www.planningforautism.com.

Leadership Matters: Elementary Self-Contained Autism Special Education Teachers' Perceptions of Administrator Support

Kasey Dye, Ph.D. Candidate
Rachel Walker Bowman, Ph.D. Candidate

Virginia Commonwealth University

Abstract

There is a national shortage of special education teachers, so it is imperative to retain special educators in the field (Carver-Thomas & Darling-Hammond, 2017). The most commonly cited reason special education teachers shared for leaving is lack of support from their administration. The purpose of this qualitative study was to explore how special education teachers of self-contained grades 3-5 classes of children with Autism Spectrum Disorders perceive the level of support provided by their school-based administrators and the influence of their school-based administrators on their experience of job satisfaction. Through individual interviews with three teachers, the researchers found that self-contained special educators' perceived levels of support provided by school-based administrators varied based on administrators' special education knowledge, communication, advocation, follow-through, and treatment of special educators as professionals. The other primary finding was that school-based administrators can positively or negatively influence self-contained special education teachers' job satisfaction. The researchers discussed the implications of these findings.

Keywords: administrator support, self-contained teacher, job satisfaction, autism

Leadership Matters: Elementary Self-Contained Autism Special Education Teachers' Perceptions of Administrator Support

Public schools are required by federal law to provide a free and appropriate public education (FAPE) to all students, regardless of disability status (U.S Department of Education, 2010). This requires an adequate number of special education teachers (SETs) so that schools can appropriately serve their special education students. Retention of special educators is a national problem with 48 states and the District of Columbia reporting a shortage of SETs (Carver-Thomas & Darling-Hammond, 2017). During the COVID-19 pandemic, more teachers are considering quitting than ever before (Will, 2021). When SETs leave the profession, the most vulnerable students are often left with unqualified replacements. Teacher turnover, defined as teachers who leave their schools and are replaced with teachers who are new to the schools, negatively affects student achievement in math and English language arts (Ronfeldt et al., 2013). Student achievement is lower in schools with high teacher turnover, even in classrooms where teachers have remained in their positions (Ronfeldt et al., 2013). This teacher shortage could result in educational loss and possible lawsuits, and can be very costly for school districts (Bozonelos, 2008).

In addition to a shortage of special educators, there has also been a dramatic increase in the number of children identified with Autism Spectrum Disorder (ASD). The Centers for Disease

Control and Prevention (CDC) reported the prevalence of ASD was approximately 1 out of every 150 children in the year 2000 (Centers for Disease Control and Prevention [CDC], 2020). However, by 2016, that number increased to 1 out of every 54 children (CDC, 2020). School systems need to retain self-contained autism SETs to meet the needs of special education students, comply with federal legislation regarding the rights of special education students, and provide these students with experienced special educators.

The relationship between a teacher and administrator influences the teacher's commitment to their school (Brown & Wynn, 2009; Cornelius & Gustafson, 2020). SETs who leave teaching most commonly credit inadequate support from their administrators as their reason for leaving (Conley & You, 2017). Self-contained teachers work challenging jobs, often juggling large amounts of paperwork and extreme student behaviors (Billingsley & Bettini, 2019). However, participants in this study reported that their difficult teaching positions were made further arduous when they felt unsupported by administrators. Thus, the purpose of this study was to explore the experiences of teachers of self-contained grades 3-5 classes of children with ASD with their school-based administrators through individual qualitative interviews. This study aimed to address the following research questions:

1. How do special education teachers of self-contained grades 3-5 classes of children with autism perceive the level of support provided by school-based administrators?

2. How do special education teachers of self-contained grades 3-5 classes of children with autism perceive the influence of school-based administrators on their experience of job satisfaction?

Literature Review

The concept map (Figure 1) for this study illustrates self-contained SETs' perceptions of their school-based administrators' level of support and how that influences their job satisfaction. It is important to build and support self-contained teachers' school satisfaction to increase retention rates. Positive relationships with school-based administrators can increase SET retention (Brown & Wynn, 2009). There is a national special educator shortage, and SETs have higher attrition rates than general education teachers (Carver-Thomas & Darling-Hammond, 2017). The concept map below was developed by the lead author based on her experience as a self-contained SET and knowledge gained from previous literature.

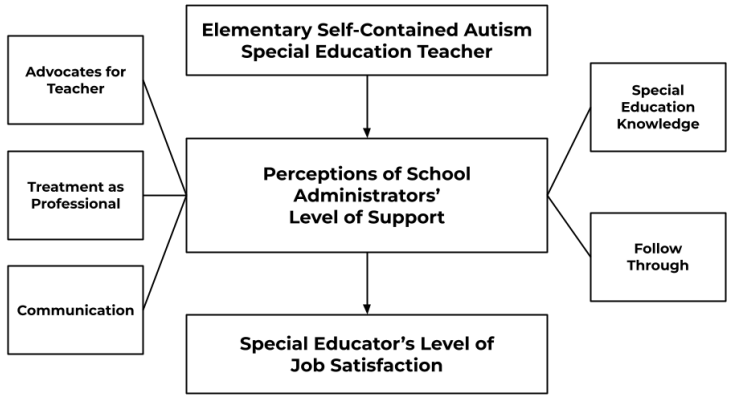

Figure 1: Elementary Self-Contained Autism SETs' Perceptions of School-Based Administrator Support

The researchers believe that perceptions of administrators' level of support can influence the SET's job satisfaction. There are many ways that the administrator can support the SET. Mrstik et al. (2019) interviewed five self-contained autism special educators that were considered highly successful and found that all of the educators stated the need for a school-based administrator that focuses on the inclusion of students with disabilities and establishing an inclusive school culture. School-based administrators have the ability to create an inclusive school environment and advocate for their students and SETs (Brown & Wynn, 2009). Self-contained classrooms often serve students with high-support needs, leading to exclusion from daily and special events (i.e., lunch, field trips). This exclusion can extend to the teachers of the classroom and create an isolating work environment. School-based administrators can advocate for SETs and ensure that they are included in team meetings, given opportunities to attend events during the school day that other teachers are attending, and have protected planning and lunchtime. Treating the SET as a professional and valuing their expertise can make the SET feel more supported. School-based administrators can include special educators in their decision-making processes and meetings. Administrators need to clearly communicate with SETs to better support them, so teachers are aware of the expectations (Cornelius & Gustafson, 2020).

Another factor that affects the level of support that a school-based administrator can provide is their knowledge of special education. Many administrators are not prepared to work with special education students and teachers. Multiple studies have found that almost 50% of school-based administrators did not have a single course dedicated to special education in their administrator preparation programs and do not feel prepared to work with special education students upon graduation from their administrator preparation program (Angelle & Bilton, 2009; McHatton et al., 2010; Sun & Xin, 2019). This impacts their ability to support a SET and the special educator's job satisfaction in many ways. Administrators may not be able to give specific and constructive feedback if they do not understand how to teach special education students. Administrators who do not have knowledge of special education law can cause extra strain on special educators and these administrators will not be able to fully contribute in IEP meetings. Administrators lacking in special education knowledge may support ideas that negatively impact student behavior and make the special educator's job more difficult. Special education knowledge in safety and behavior support can affect the SETs' perceptions of administrator support. SETs in self-contained classes are often hit, kicked, threatened, and deal with other

violent or damaging behaviors from the students. School-based administrators can influence these events by assisting in restraining the student, removing the student from the classroom, or assisting in a behavior intervention plan. If a student is in an inappropriate classroom placement, the administrator can advocate to district officials to move the student to an appropriate setting.

Through this qualitative study, we explored how self-contained autism SETs perceived the level of support provided by their school-based administrators and their influence on job satisfaction. It is essential to research this idea because teachers who are more satisfied with their schools are more likely to remain teaching.

Methods

This qualitative research study was a secondary data analysis of previously collected individual interview transcripts with three different participants. Each interview lasted approximately one hour. All three participants were current self-contained special educators teaching grades 3-5 in classrooms for students with ASD.

Site and Participant Selection

Special educators have very different job roles, such as inclusion teachers, self-contained teachers, reading specialists, and many more. One of the selection criteria was to interview self-contained SETs with autism classrooms. The researchers chose this small group of teachers to see if there were commonalities among the experiences of upper elementary autism teachers. These special educators had to have their own classroom, with the majority of their students identified as having ASD and spending at least 50% of their school day in their classroom. Future additional research could be completed with lower elementary, middle, and high school self-contained autism SETs, as well as more SETs. This study investigated self-contained special educators' experiences because these teachers are often isolated in their schools and can have more difficult teaching roles.

Three self-contained elementary SETs, Colette, Jaime, and Hannah (pseudonyms used), from three different schools, were selected to be participants in this study. All three SETs taught students with autism in self-contained grades 3-5 classrooms. The primary researcher had prior relationships with all three participants. The participants appeared comfortable discussing their experiences and were vulnerable in their responses. Knowing special education terminology was very helpful for the researchers as the participants used acronyms and terms that were special education-specific. The researchers will further discuss this in the validity section.

The primary researcher started the interviews by asking questions about the participants' backgrounds and current teaching situations. All three participants had similar backgrounds, as seen in Table 1 below.

Table 1
Participant Demographics

Pseudonym	Sex & Race	Educational Background	Total Years Taught	Years Taught at Current	Length of Relationship with Current

				School	Administration
Jaime	F White	Bachelor's Degree in Special Education, Master's Degree in Special Education, & Autism Certificate	4	4	Principal - 4 years Asst. Principal - 1 year
Hannah	F White	Bachelor's Degree in Special Education, Master's Degree in Reading Education, & Autism Certificate	5	1	Principal - 2 days Asst. Principal - 2 months
Colette	F White	Bachelor's Degree in Special Education, Master's Degree in Special Education, & Autism Certificate	4	4	Principal - 4 years Asst. Principal - 2 years

Data Collection

All participants were interviewed as part of a class project and recorded through Zoom. Each interview lasted about one hour. After the interviews were completed, the recordings were uploaded into Kaltura, and a transcript was created for each interview. The transcripts were checked and corrected for accuracy. The transcripts used pseudonyms for each participant, and additional pseudonyms were used if the participants named a person in their interview to ensure confidentiality. No identifying information was shared in the transcripts. The primary researcher created a series of open-ended questions related to the concept map and research questions. The interviews were semi-structured, which allowed for flexibility if follow-up questions were needed.

Ethics

The interviews were conducted to fulfill the requirements of a doctoral-level qualitative research methods course. Afterward, all three participants gave permission for the researchers to analyze the transcripts and publish their findings. Virginia Commonwealth University's IRB panel gave the researchers an IRB exemption. The purpose of this study was to gain knowledge about how special educators of self-contained classes perceive the level of support provided by their school-based administrators and their influence on job satisfaction. One risk of participating in this study was that administrators or school district officials could find out statements that participants made. To address this, all three teachers were kept anonymous in transcripts and in all writings. Another risk was the possibility of negative emotions or memories that could arise when participants discussed work stressors and their feelings about teaching. All participants signed a consent form prior to participating in the interviews. Participation in this study was voluntary, and participants had the right to decline to answer any or all questions and withdraw from the study at any time. The primary researcher reiterated this at the start and conclusion of the interviews, along with the fact that their identity will be kept confidential. Once they ensured that the transcripts were completely accurate, the researchers deleted the original audio recordings to further protect the confidentiality of the participants. All notes, transcripts, and documents that the researchers kept had pseudonyms for each participant and did not contain any identifying information.

Validity

Some validity threats in this study included reactivity and lack of triangulation. The researchers received an agreement to participate from all three of the participants that were interviewed. Our participants were not diverse, and the primary researcher only conducted a single hour-long interview with them, so we also did not have a variety of methods. The researchers addressed this threat to validity by being open about it when this manuscript was written.

The other validity threat in this study was reactivity. All three participants were teachers the primary researcher had known for multiple years. The primary researcher's length of acquaintance with the participants could have impacted how the participants responded to the interview questions. This was the most serious validity threat, and it needed to be addressed before the researchers started collecting data or analyzing it. The researchers addressed this in the opening script of their interview protocol. The primary researcher started the interview by saying that they wanted the participant to share how they truly felt when answering the questions. The primary researcher avoided asking leading questions and did not share their hypothesis with the participants to ensure that they did not try to answer the questions based on how they thought the researcher would want them to be answered. Participants did not have prior knowledge of the researchers' theories for this topic, and the primary researcher did not talk about the project with them prior to requesting an interview with the participants. Reactivity was not entirely avoidable, so the researchers focused on how they might influence the participants and how this could affect the validity of their inferences when they analyzed the data. There was also an advantage to having relationships with the participants, such as increased comfort level and honesty of the participants.

Data Analysis

After receiving an IRB exemption, the researchers began their analysis of the interview transcripts. The primary researcher created a preliminary codebook and coded the first interview; then they edited the codebook to fit the data better. The primary researcher added more specific codes, such as communication with admin, and removed codes that were too broad, such as positive feelings toward admin. The primary researcher then coded the second interview using the updated codebook. The primary researcher added more codes during that coding process. After coding the second interview, the primary researcher re-coded the first interview with the updated codebook and then coded the third interview. Next, the secondary researcher read through the transcripts and added additional codes for COVID-19 and autism-specific knowledge. The secondary researcher agreed with the coding that had been completed by the primary researcher and did additional coding based on the two codes they added to the codebook. Finally, both researchers met and discussed any coding differences until agreement was 100% for all three transcripts.

Findings

Findings of RQ1

After coding the three interviews, the researchers analyzed the results and looked for common themes that addressed research question 1: How do special education teachers of self-contained grades 3-5 classes of children with autism perceive the level of support provided by school-based administrators? The primary finding was that SETs' perceived levels of support provided by

school-based administrators varied based on administrators' special education knowledge, communication, advocation, follow-through, and treatment of special educators as professionals. All three participants shared that they work primarily with their assistant principal for special education matters.

Effects of Administrators' Special Education Knowledge

Almost half of all administrators in the United States did not have a single course specific to special education in their administrator preparation program (Angelle & Bilton, 2009; McHatton et al., 2010; Sun & Xin, 2019). All three participants felt that their administrators did not have enough knowledge of special education, and only one participant had an administrator with a special education background. Participants also felt that their administrator's lack of special education knowledge burdened them professionally. These burdens included additional responsibilities and mistakes that resulted in IEPs being out of compliance.

Jaime was frustrated that her assistant principal filed special education legal documents late, making them out of compliance. Jamie had to double-check her assistant principal's paperwork for accuracy and spend extra time meeting with her to explain her duties as the Local Educational Agency (LEA) in IEP meetings because of the assistant principal's lack of special education knowledge. Jaime stated that her assistant principal "doesn't know at all" what Jaime does daily for her job as a self-contained SET. Not understanding the job of a self-contained SET makes it extremely difficult to support them. Jaime supported her administrator rather than the administrator supporting her.

Jaime also stated that her assistant principal had less special education knowledge than the typical general education teacher, and her lack of knowledge was an additional burden on Jaime.

> *I had to sit down with my assistant principal and basically tell her what her job was, which again, is extremely frustrating when somebody is supposed to be over you and then you're telling them what they're supposed to do. And it's kind of like wow you get paid at least twice as much as me, you're supposed to be in charge of these things. That was very, very frustrating*.

The administrator's lack of autism-specific knowledge was emphasized in disagreements. Colette and her administrator had different opinions about the root of a student's behavior. College said, "she got very upset with me and told me I had no authority to say anything about autism or say that the things that he was struggling with were not a result of his autism." She added, "it was a little frustrating because I have two degrees in special education and a certification in autism spectrum disorder. And every classroom I've ever worked in."

Colette shared that during her first year of teaching, the assistant principal asked Colette to fill out her own feedback form. Colette stated that the assistant principal "said she didn't know what my kids were supposed to be doing or what I was supposed to be doing. So she asked me to just write in what I could be doing better." This is a clear example of how administrators are unable to fully support self-contained autism SETs when they do not have enough special education knowledge. Colette believed that her administrators would sometimes pretend to know special education law instead of admitting that they did not. Colette also shared that when her assistant

principal is “uncomfortable with the content, she gets very defensive, and it is difficult to work with her.”

Similarly, Hannah stated that in her five years of teaching, most of her administrators lacked “knowledge on how to teach students that I teach.” Hannah shared that this impacted her because she was not given specific or valuable feedback when administrators observed her because they did not know how to best support her students. Most of the feedback she was given consisted of being told, “that's great. Keep doing that.”

Conversely, when administrators have knowledge of special education or work towards gaining additional knowledge, self-contained SETs feel more supported. Jaime’s principal is a former SET. Jaime’s principal was previously her assistant principal. Jaime shared that “she was really good about special education paperwork. She was really good about compliance. She understood those things. She understood her role as an administrator in those types of meetings, which was very helpful.” Jaime felt that her principal was better able to support her because of her knowledge and background as a SET. Hannah stated that her assistant principal did not have knowledge of special education but that she “was very open with that. She's like, ‘I can't wait to take more classes and to be in here and learn a lot.’” Hannah appreciated the willingness to learn and enthusiasm that her assistant principal shared with her.

When Colette was asked what recommendations she had for improving administrator support, she answered:

> *Special education training for administrators. It would be really nice to have. I've never had an administrator who has knowledge of special education equivalent or greater than my own. And I feel like if you're in a role where you're the LEA in IEP meetings and doing eligibilities, observing special education teachers and monitoring curriculum in those classrooms. I feel like you need to have as much sped knowledge, at least the baseline that I'm required to have.*

Communication

The participants shared the need for administrators to provide clear and open communication with self-contained SETs. Including self-contained SETs in discussions and providing positive communication was important to Hannah and Jaime. Hannah stated that “having admin who not only agree with you but say, here's what I'm gonna do about it and they include you in that conversation. I think that means a lot.”

Jaime spoke about her frustrations with her school-based administrators and the effects of negative communication with SETs. Jaime stated that her assistant principal made her feel defeated and not supported because of her negative communication.

> *A lot of times she'll say really hurtful things and then later come back and say, “Oh, I didn't say that” or “I didn't mean it that way.” And that's really frustrating seeing somebody in a leadership role that isn't being mindful of the way they make other people feel. My second year of teaching, she literally said to me, “I don't know what's wrong with you this year. Last year you really had yourself together and this year you’re kind of*

> *all over the place." And I was just taken aback by that...In the moment it was really defeating. I was a second-year teacher thinking I was doing way better than my first year. It was extremely hard to hear.*

Jaime was also frustrated with her administrators' lack of communication and their seemingly deliberate method of withholding information. This lack of communication also made Jaime feel that she was not being treated as a professional. Negative communication also emphasized the power dynamics in their relationship. Jaime shared:

> *I felt like they were withholding communication that they were receiving until the last minute and even several times like we were told, "I can't tell you that yet." It almost makes you feel like you're like a child being told by an adult. Because when you say I can't tell you that, it's not helpful and it's just frustrating. Either just tell us or tell us you don't know anything because you saying, "I have information and I'm not going to tell you" is way more frustrating than just telling us that you're not going to answer or you don't know how to answer that question.*

Advocation

All three participants discussed how they felt more supported when administrators advocated for them. They also expressed the effects of advocacy on their day-to-day life in their careers and the consequences of a lack of advocacy. Jaime talked about the importance of school-based administrators advocating for self-contained SETs at the district level. Jaime was asked what her school-based administrators could do to make her job easier. She answered, "Advocate at the upper admin (district) level for us about planning time, the amount of professional developments, and the amount of training. Advocate at school board meetings for us about the amount of testing that these kids have to endure." Jaime believed that her school-based administrators could better support her by taking her concerns to the district level and mediating the pressures that the district put on her.

Furthermore, Colette frequently stated that she did not feel supported by her school-based administrators. Colette felt that she had to advocate for herself because her administrators did not advocate for her needs. When she was asked to describe a situation where she felt very supported by one of her school-based administrators, Colette replied, "I don't know. That's a good question. I cannot currently think of one that I didn't have to really fight for myself lately."

Hannah, however, was very positive about her new school-based administrators because she felt highly supported by them. When asked about her new school-based administrators, Hannah stated, "I have felt nothing but support. They've advocated for me in several ways. They reach out to make sure we're okay. They're always willing to help, even though they don't have time to do that. That means a lot."

Follow-Through

Hannah and Jaime stressed the importance of follow-through in their interviews. Both teachers felt that their school-based administrators had made promises in the past that they did not keep, which made their jobs more difficult. Hannah talked about her previous school principal and how he did not support her. Hannah had a student with very aggressive behaviors and stated that she

would often leave school bleeding and bruised from the student. Hannah shared that her school principal "would go, 'Oh, yeah, that's really hard. You're doing a great job.' And there were empty promises made, like - 'oh yeah, we'll get a change of placement.' And it never happened." The lack of follow-through on the administrator's promises made Hannah's job very difficult, and even dangerous. This situation and the lack of support she was given by her school-based administrator led Hannah to frequently state during the interview that administrators need to be "advocating for teachers' needs and following through and following up with that."

When Jaime was asked what recommendations she had for improving administrative support, she stated, "listen to your teachers, and then follow through with it." She further elaborated that she was frustrated by her school-based administrators and their lack of follow-through.

> *I think that they had these good intentions but then they're not following through on that. So that's what could be better. It's following through on these intentions and actually doing better, not just saying, "We'll do better. We're here to support you." Well then support us and don't just say "we're here to support you."*

To Jaime, statements of support were not actually supporting the SET. Jaime needed actions and follow-through on promises of support to feel an increased level of support from her school-based administrators.

Treatment of Special Educators as Professionals

All three participants discussed how treating the self-contained SETs as professionals was a method of support. Hannah stated, "I like that I'm given the liberty to do what my kids need and I'm not micromanaged by my admin." Colette emphasized the importance of being treated as a professional throughout her interview. The researchers asked Colette to describe what being supported by her school-based administrators looked like and she replied, "I think that being supported by my administrator would look like being treated like a professional who knows about special education." Colette was frustrated that she was not treated as a professional and that her school-based administrators did not value her knowledge or expertise. She stated:

> *Well, I don't feel like I'm treated as a professional at my job most times. And I was very confused and very frustrated that I was giving my professional opinion about something in the best interests of a student, and was told that I have no authority to make those kinds of comments and concerns. I would say that the most frustrating part of my job is that I try to do the best for kids with my expertise, and then I'm told I have no expertise.*

Jaime also had frustrations with her school-based administrators and felt that they didn't treat SETs as professionals because they often forgot about the SETs when planning school meetings or events. Jaime shared:

> *They don't think about whether we're going to be included in a training or whether we need a spot for this activity or not. Even in the beginning of the school year, we did a team-building activity as a whole staff and they sectioned everybody off by grade levels. They did not specify whether they wanted sped (SETs) to integrate or to be our own team, so we asked them. And they were like no, no, you just all spread out. You could tell it a*

> *last-minute thought. And so that's a little frustrating because things like that will happen a lot. And you're like, wow, you did not think about us. And the special ed team, that's the largest team in the school. Like in an elementary school you only have so many teachers per grade level. So, it's three or four, sometimes five people on a team. And in the special ed team, we have 11 people. And, so, it's like wild, that we're the biggest team, but we are definitely the most forgotten team, which is definitely frustrating.*

Jaime did not feel supported by her school-based administrators when they did not treat her and the other SETs in her school as professionals. Having the largest team in the school and being continuously forgotten made Jaime feel that she wasn't valued by her school-based administrators.

Findings of RQ2

The second research question was: How do special education teachers of self-contained grades 3-5 classes of children with autism perceive the influence of school-based administrators on their experience of job satisfaction? The primary findings pertained to the influence of administrators' support on SETs' job satisfaction; self-contained SETs with supportive administrators were satisfied in their jobs, while those with unsupportive administrators felt negative influences on their job satisfaction.

Positively Influence Job Satisfaction

When school-based administrators are supportive of self-contained SETs, they can positively influence their job satisfaction. Hannah felt very supported by her new assistant principal after Hannah had to restrain a student, due to safety concerns, for a period of time and the assistant principal offered her assistance. After the student de-escalated, Hannah stated that the assistant principal further supported her by giving her a much-needed break. "I took a walk around the school, got some water, and just kind of chilled in the office for a while and she sat with the students. So that was really, really nice." Hannah also shared that her principal and assistant principal helped her in the classroom multiple days when there were not enough substitutes available. This made Hannah feel supported by her school-based administrators and she repeatedly noted that she was happy at her school and with her new school-based administrators.

> *We have been down an assistant, and so many days she spends her whole day in my classroom as an assistant, which is great. I love the support...And I think it's really been eye-opening for them to spend so much time in my classroom since it's so understaffed. And so I think their wholehearted appreciation for what we're doing is very genuine.*

Colette discussed a time when district officials came to her school and her principal showed them around the school, making sure to take them to classrooms that she wanted to show off as examples of excellence. Colette's school-based administrator increased her job satisfaction when she demonstrated to Colette that she respected her teaching abilities. The principal took the district officials to Colette's classroom. Colette stated, "that made me feel pretty valued that she made a point to highlight what I was doing in my room with my kids." Colette's school-based administrator increased her job satisfaction when she demonstrated to Colette that she respected her teaching abilities.

Jaime had a similar experience where she felt valued by her school-based administrator. She discussed a school-based administrator that she remembered from her first year of teaching that came into her classroom "and said how much she appreciated me and how excellent I was doing. I remember that stuck out to me because she came out of her way to come and tell me how much she appreciated me." Both Jaime and Colette's statements show how little actions by school-based administrators can positively influence self-contained SETs job satisfaction.

Negatively Influence Job Satisfaction

On the opposite end of the spectrum, school-based administrators can negatively influence self-contained SETs job satisfaction. Colette's school-based administrators made her job more difficult, and she felt overworked and overwhelmed. The school-based administrators negatively influenced Colette's job satisfaction and made her want to leave her school. Colette discussed that how she was treated and spoken to by her school-based administrators negatively influenced her job satisfaction. Colette shared:

> *They've treated me like I'm not a professional. But then when someone else messes up extraordinarily, they come to me for help. So I'm beaten down and told I don't know what I'm doing, but then while I'm down there, they're like, "oh, but this person doesn't know what they're doing at all. Can you fix that?" So, it's disrespectful.*

Colette felt that she was not respected or valued by her school-based administrators. She also discussed how their lack of special education knowledge negatively affected her and decreased her job satisfaction. When discussing her school-based administrators, Colette stated:

> *[They] are making decisions about sped without including us [SETs], which makes bigger messes to clean up. So, I feel like the reason why my job is so difficult and why I don't like going to work sometimes is because I do a lot of other people's work because they don't come to me for help first. I feel like I'm always on the triage team and it's a lot of work. And I feel like when I have to do that, I'm not my best self for my students. It just feels like I'm on a hamster wheel and my kids are all falling off because we can't stay on this. And it just feels like a mess.*

When Jaime was asked to rate her school-based administrators on a scale of one to ten, she stated:

> *I'm going to put that at a five. The main reason for that is the environment that they have set in the school, in the atmosphere. It's just really gone downhill from previous administrators. There's not the level of inclusiveness and not the level of collaboration that there has been in the past. And definitely the level of appreciation has gone down and the level of communication. I think that everyone is just a little bit more frustrated.*

Jaime shared multiple factors that her school-based administrators impacted that led to her being frustrated and dissatisfied with them and had a negative influence on her job satisfaction.

Satisfaction & Future Plans

At the conclusion of each interview, the researchers asked the participants to rate their satisfaction with their schools on a scale of 1 to 10, to rate their satisfaction with their school-based administrators on a scale of 1 to 10, and if they planned to stay at their school next year. The ratings are reported below in Table 2. Jaime and Colette rated their school-based administrators middle to low, giving a 5 and 4 respectively, while Hannah rated her school-based administrators high with a 9. However, it is important to note that Hannah's relationship with her school-based administrators was very new. Her assistant principal started working with her two months before our interview, and the principal started at her school two days before our interview. Jaime and Colette worked with their school-based administrators for years and had established relationships with them.

Table 2
Participants' Satisfaction and Future Plans

Pseudonym	Satisfaction with School 1 (lowest) - 10 (highest)	Satisfaction with School-Based Administrators 1 (lowest) - 10 (highest)	Plan to Stay at School Next Year?	Reasoning
Jaime	6	5	No	Has a baby and wants to focus on her family
Hannah	7-8	9	Possibly	Enjoys her school, but wants to earn more money and start a family
Colette	4	4	No	Is very frustrated with her school and administration

Jaime and Colette planned to leave their schools at the end of the school year. Colette shared, "I feel like my mental health is suffering because of this job, and I don't feel like that's necessary." Jaime was a new mother and wanted to focus on her family. Hannah was unsure of her future plans. Hannah loved her school, but she wanted to start a family and stated that "another big factor is I have a master's degree, and I don't get paid a lot. And I'm pretty over that."

Discussion

After completing the analysis of the interviews, the researchers focused on implications based on the findings. Below are implications for scholarship, policy, and practice.

Scholarship

Special educators of self-contained classes for children with ASD often have difficult and isolating teaching positions. There is a gap in the literature on these teachers' relationships with their school-based administrators. This study explored common themes among three special educators of self-contained classes for children with ASD, specifically when looking at their perceptions of their administrators' support and their influence on the SETs' job satisfaction. This study confirmed what prior research has shown; school-based administrators need special education knowledge to best support their SETs and students receiving these services (Sun & Xin, 2019). Future research is needed to compare special educators' perceived levels of support from administrators who took a special education class in their program to those who did not.

We also need more research on what school-based administrators can specifically do to better support their SETs.

Policy

Research has demonstrated that typically less than 50% of administrators have specific special education courses in their administrator preparation programs (Angelle & Bilton, 2009; McHatton et al., 2010; Sun & Xin, 2019). States should add a required special education course to all administrator preparation programs so that administrators can better understand the needs of all students and how to support their SETs. All three participants in this study recommended that school-based administrators have sufficient special education knowledge. The researchers also recommend that states offer programs or assistance for special educators to become endorsed as school administrators. School-based administrators with experience as a SET could provide more support to SETs because they understand their job and have the necessary special education knowledge.

Practice

This study illuminated the experiences of SETs of self-contained classes for children with ASD. If we can determine how to increase special educators' perceptions of administrative support, we could potentially increase their job satisfaction and retain these teachers. To provide increased levels of support, the researchers recommend that administrators:

1. Create relationships with their self-contained SETs
2. Treat self-contained SETs as professionals
3. Advocate for self-contained SETs
4. Follow-through on promises
5. Take additional professional development or courses to increase knowledge of special education
6. Establish clear and open communication with self-contained SETs

Limitations

There are multiple limitations to this study that should be considered. Several of these limitations pertain to the sample obtained. First, this study did not have an unbiased recruitment process and the same size was very small, with only three participants. This paper's first author was previously acquainted with the participants. Second, all participants were White and identified as female, making this sample very homogeneous. This study includes three teachers and does not represent the overall population of SETs of self-contained grades 3-5 classes of children with ASD; however, the results of this study may be relevant to other teachers beyond this study's narrow population. This study was a secondary data analysis, so interobserver agreement was not included for the collection and transcription of the data. However, the primary researcher used transcription software and completed a hand check of the transcriptions when the data was originally collected. Our findings indicate areas for future researchers to do more rigorous studies, such as having a randomized recruitment process and a larger sample size.

Conclusion

School-based administrators impact the job satisfaction of SETs of self-contained grades 3-5 classes of children with ASD and their perceived level of support matters. There is a national SET shortage, so it is vital that school-based administrators endeavor to increase their support of SETs. SETs of self-contained grades 3-5 classes of children with ASD in this study perceived that the level of support provided by their school-based administrators varied based on administrators' special education knowledge, communication, advocation, follow-through, and treatment of special educators as professionals. This study adds to the current research that demonstrates that the relationship between a SET and their school-based administrators is important and affects their job satisfaction.

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About the Authors

Kasey Dye is a third year Ph.D. student at Virginia Commonwealth University studying special education. Her research interests include healthcare access for children with disabilities. Kasey previously served as a Peace Corps Volunteer in China and worked as a special education teacher in Virginia.

Rachel Walker Bowman is a third year Ph.D. student at Virginia Commonwealth University studying special education. Her research interests include new teacher mentorship and diversifying the special education workforce. Rachel previously taught as a teacher of the Deaf and Deaf-Blind in New York City, Washington, D.C., and Virginia.

Infusing High Leverage Practices into Culturally Relevant Education to Support Culturally and Linguistically Diverse Students with Disabilities

Toni Franklin, Ph.D.
Columbus State University

Maria Peterson Ahmad, Ph.D.
Texas Woman's University

Abstract

Classrooms today have an increased number of culturally and linguistically diverse (CLD) students. The ability to provide high quality instruction for a diverse group of learners goes beyond simply knowing good instructional practices. Teachers also need to be aware of how a student's culture and background impact classroom performance. Incorporating knowledge of a student's life outside of the classroom along with effective instructional practices, such as high leverage practices (HLPs), helps to ensure all students in the classroom can be successful. Being an effective teacher and a culturally responsive teacher are not mutually exclusive concepts; however, it does take intentional effort to achieve both. This article discusses strategies for being a highly effective and culturally responsive teacher.

Keywords: high leverage practices (HLP), students with disabilities, culturally relevant education (CRE), culturally and linguistically diverse students, instructional practices

Infusing High Leverage Practices into Culturally Relevant Education to Support Culturally and Linguistically Diverse Students with Disabilities

*Ms. Sullivan is a second-year special education teacher at a socio-economically and culturally diverse Title I elementary school. The students served in Ms. Sullivan's small pull-out group of fourth graders are culturally and linguistically diverse (CLD) students with disabilities. While Ms. Sullivan feels more confident in her role as a special educator than she did in her first year of teaching, she is still trying to navigate how to build better relationships and support her students' social/emotional, and academic needs. In particular, Ms. Sullivan is concerned about adequately supporting Rama, a student who is new to her caseload this year. Rama's family is from Nepal and although Rama speaks fluent English, her parents do not. Ms. Sullivan remembers from her teacher preparation program learning about how to establish a respectful learning environment, which is an important high leverage practice (HLP)**. *She works hard to make her classroom a welcoming and safe place for all her students, but she is not confident in her ability to do this for Rama because she has never had a student who is a first-generation U.S. citizen in her class before. Her knowledge of the family's culture is limited; however, she is committed to learning how to effectively meet the needs of all of her students and knows that she could benefit from professional development in strategies that can further support her students' growth socially-emotionally and academically.*

Diversity of Student and Teacher Populations

It is without question that general and special education teachers need to know how to effectively and efficiently provide high-quality academic and social-emotional instruction to diverse students, including those with disabilities. Classrooms today have an increase of culturally and linguistically diverse (CLD) students who encompass a variety of cultural and socioeconomic backgrounds and who speak languages other than English. Over the last decade, the population of students in K-12 public schools has become increasingly diverse with the percentage of White students in public schools decreasing from 61% to 48% between 2000 and 2017 (National Center for Education Statistics, 2021). This trend will likely continue, as CLD students are expected to account for 56 percent of the student population by 2024 (U.S. Department of Education, Office of Planning, Evaluation and Policy Development, 2016). Similarly, the demographics of CLD students with disabilities appear to be mirroring the continued diversity of the general student population. According to the National Center for Educational Statistics (NCES), between the 2017-2018 and 2018-2019 school years, the percentage of White students receiving services for special education has decreased, while the percentage of all other ethnicities reported (except two or more races) has increased (National Center for Education Statistics, 2020).

While students in classrooms are becoming more ethnically and academically diverse, the teaching workforce is not. Reports indicate that over the past 20 years, the demographics of the teaching workforce have changed very little and remain predominantly female (75%) and White (79%) (deBrey et al., 2019; National Center for Education Statistics, 2021). Thus, creating cultural differences in the classroom. Culture refers to more than one's identified race and nationality; it also includes one's social values, behavioral standards, worldviews, and beliefs. Teachers bring into the classroom their own cultures and world views which subconsciously impact everything the teacher does including how they teach and interact with students (Gay, 2018). Cultural disparities between CLD students in a classroom and the teacher of that classroom can result in cultural differences and misunderstandings that lead to ineffective teaching and lower student achievement (Krasnoff, 2016), particularly for CLD students with disabilities. Therefore, it is imperative that teachers utilize effective practices that support the unique academic and social-emotional needs of CLD students with disabilities. One way to practice this is through various classroom communication efforts (e.g. planned formal/information meetings, open houses) (Hagiwara & Shogren, 2019).

Ms. Sullivan decided to attend two professional development sessions which covered strategies that support the use of HLPs and culturally relevant education (CRE). She chose these two sessions specifically because she wanted to continue learning how to effectively implement HLPs and to learn strategies that could support her CLD students. In thinking about what she learned, Ms. Sullivan was dedicated to making stronger connections with her students and building her classroom community. She hosted a friends and family luncheon in her classroom to get to know her students and their families on a more personal level. During the friends and family luncheon, she took the time to learn about her students' lives outside of school and allowed students and family members to share stories with the class, about whatever they were comfortable sharing. For example, some families spoke about their cultural practices, and some shared stories about extracurricular activities. Ms. Sullivan even shared a story about her childhood and how she became a teacher. Ms. Sullivan was hoping that the collective sharing of these stories would

increase rapport and build stronger connections between school and home. Everyone was not able to have a family member come for lunch; therefore, Ms. Sullivan created a questionnaire for her students that included questions about their family traditions and special occasions, in addition to their preferences in learning, activities, hobbies, and interests. This information would assist her in further planning and personalizing learning for each of her students so that she could better implement HLPs and CRE and further connect to students' experiences and cultures.

Culturally Relevant Education

The importance of recognizing diverse cultures and how that contributes to a student's success in the classroom has been a prominent discussion in the education field. The discrepancy between the academic achievement of CLD students and White students has been a concern for educators for decades (Ladson-Billings, 1995; Gay 2013; Gay, 2018; Aronson & Laughter, 2016). One approach to reducing this discrepancy is the integration of CRE practices into diverse classrooms. CRE is defined as the practice of integrating the student's unique cultural knowledge, backgrounds, and frames of reference into learning experiences to make the lessons more relevant to and effective for all students in the classroom (Ladson-Billings, 1995; Gay, 2018). The concept of CRE is different from multicultural education. While multicultural education focuses on teaching about the diversity of society in general, CRE extends the premise of multicultural education by using instructional practices that take a more personalized approach and involve the teacher connecting classroom experiences and learning activities to students' home experiences and native languages (Ladson-Billings, 1995; Gay, 2013; Gay, 2018). CRE is similar to developing an Individualized Education Plan (IEP), the plan of action depends on the individual student's unique needs and lived experience.

CRE is based upon teachers validating students' unique individual life experiences while simultaneously building trusting and caring relationships by getting to know the students on a personal level and encompasses teachers maintaining high expectations, promoting cultural competence and critical consciousness (Gay, 2013; Ladson-Billings, 1995). Darling-Hammond and Edgerton (2021) emphasize that students actively construct knowledge by connecting what they know to what they are learning in cultural contexts and learn best when they feel safe, affirmed, and deeply engaged within a supportive community of learners. Culturally responsive teachers seek to understand students' lives outside of the classroom and to better understand the communities in which they live. Teachers must understand the connection students' culture has to their learning and prepare academically challenging lessons that are differentiated by incorporating references to the students' native languages, histories, and other cultural aspects into daily classroom culture and practices. Through the use of CRE, the academic achievement of culturally diverse students increases, including students with disabilities (Klingner et al., 2016; Lane et al., 2016). When content becomes personally meaningful and is taught in an engaging and explicit format paired with effective instructional practices, all students benefit (Archer & Hughes, 2011; Hughes et al., 2019).

High Leverage Practices

In 2017, the Council for Exceptional Children (CEC) and the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) Center identified a set of 21

special education HLPs, grouped into four categories of critical practices that general and special educators should know and master in order to improve student outcomes. They include (1) collaboration; (2) assessment; (3) social-emotional development/behavior; and (4) instructional practices; all of which are aimed at promoting student success. "Generalized research has demonstrated that HLPs have the potential to positively impact student achievement when used across a variety of content areas and grade levels" (McCray et al., 2017, p. 1). To be increasingly effective, teachers must have knowledge of content across subject areas and grade levels, the individualized needs of their students, strategic pedagogical teaching practices, and know how to analyze data in order to respond to specific student needs (Brownell et al., 2010). Further, teachers must know how HLPs can be differentiated based on the specific content and the cultural composition of their classrooms (Brownell et al., 2019). When teachers utilize HLPs with a focus on cultural responsiveness on a daily basis, they will not only improve their teaching practice but support the individualized needs of all students in the classroom (McLeskey et al., 2019; Klingner et al., 2016; Lane et al., 2016). In the following sections, each category of the special education HLPs are discussed.

Collaboration

Collaboration allows for varied experiences and perspectives to be shared about students to better understand their academic and/or social-emotional needs. Collaborative teams should include input from a variety of stakeholders including general education teachers, special education teachers, families, administrators, paraprofessionals, and related service providers to provide a comprehensive understanding of the student. During collaborative conversations, it is important to "use respectful and effective communication skills while considering the background, socioeconomic status, culture, and language of the families and professionals with whom they serve" (McLeskey et al., 2019, p. x). Three HLPs explicitly address components of collaboration (see Table 1).

Table 1
Collaboration High Leverage Practices

HLP 1- *Collaborate with professionals to increase student success.*
HLP 2- *Organize and facilitate effective meetings with professionals and families.*
HLP 3- *Collaborate with families to support student learning and secure needed services.*

Collaboration with Families. HLP 3, *Collaborate with families to support student learning and secure needed services*, emphasizes the importance of promoting family participation in the educational decision-making process. CRE supports this HLP by suggesting that teachers can respectfully and effectively communicate with families by having an understanding of the students' background, socio-economic status, language, culture, and priorities of the family. This can be done by getting to know families on a deeper level. Informal conversations and positive phone calls home can help teachers promote collaboration and learn about the interests and lives of students and their families. One way to integrate this into the classroom is to acknowledge and respect the different types of families the students in the classroom may have. Knowledge of the family make-up of the students in the classroom helps teachers from inadvertently isolating students. Events like "Donuts with Dad" and "Muffins with Mom"

assume that all students have their mom and dad as active participants in their lives. Having more inclusive events like "Muffins with Me" allows all students to participate *regardless* of their family make up and enables the teacher to get to know the important adults in the student's life. Forming relationships with the important adults in a student's life encourages increased communication and collaboration (Hagiwara & Shogren, 2019).

Assessment

Assessments are utilized to gather student information through a variety of formal and informal measures to allow for recognition of patterns of academic and social-emotional strengths and weaknesses. Data gathered from assessments allows collaborative teams to further develop and refine students' IEPs, make modifications to planning and/or instructional practices, and specify the ways in which student progress is monitored. To gather, analyze, and make decisions from assessment data effectively, "teachers must be knowledgeable of how the context, culture, language, and poverty might influence student academic performance, navigating conversations with families and other stakeholders, and choosing appropriate assessments given each student's profile" (McLeskey et al., 2019, p. x-xi). When assessments are conducted and interpreted through a culturally responsive lens, the articulation of resources and support provided to culturally and linguistically diverse students with disabilities can be increasingly individualized to meet the specific needs of each student. Three HLPs address aspects of assessment (see Table 2).

Table 2

Assessment High Leverage Practices

HLP 4- *Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs*
HLP 5- *Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs.*
HLP 6- *Use student assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes.*

Understanding Students' Strengths and Needs Through Assessment. CLD students who have a disability present a range of unique needs that need to be accurately and individually supported. HLP 4, *Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs,* supports this notion so that a comprehensive and individualized profile can be created for each student using multiple data sources (e.g., formal and informal measures, observations, work samples, information from families, etc.) to drive decisions for both academics and behavior. To support assessments that incorporate CRE, a variety of measures should be used in addition to the assessments used for the comprehensive evaluation (Lembke et al., 2019). For example, having students complete an interest inventory that includes questions about things that they would like to learn and questions about their families and cultures can help guide the teacher in choosing materials and assignments that are personally interesting to the students. In addition, this will help the teacher have a better understanding of what the students perceive as their strengths and needs to assist with lesson planning. This practice can be combined with collaboration by using the family engagement

events to gather information from family members about the student's strengths and weaknesses. The information collected from the adults who know the students the best can be used to design lessons that engage the students and provide the appropriate support.

Social/Emotional/Behavioral

Creating a classroom environment that is conducive to student success requires teachers to implement classroom practices that support student's social-emotional development and well-being. Trusting and consistent relationships between teachers, families, and students are a vital aspect of any classroom. When a respectful and inclusive school environment that is welcoming to the various backgrounds and cultures of all students is created and maintained, there are increased opportunities for student success (McLeskey et al., 2019; State et al., 2019) . Teachers must have an understanding of their students' various cultures and social norms in order to create a consistent and organized learning environment that respects student backgrounds and supports the development of learning classroom expectations. One way that this can be accomplished is by "implementing behavioral supports in a caring, respectful, and culturally responsive manner" (McLeskey, et al., 2019, p. xi). Four HLPs specifically address social/emotional practices (see Table 3).

Table 3
Social/Emotional High Leverage Practices

HLP 7- *Establish a consistent, organized, and respectful learning environment.*
HLP 8- *Provide positive and constructive feedback to guide students' learning and behavior.*
HLP 9- *Teach social behaviors.*
HLP 10- *Conduct functional behavior assessments to develop individual student behavior support plans.*

Supporting' Social-Emotional Well-Being Through Classroom Setup. Teachers can support the social emotional well-being of students in the classroom by implementing HLP *7- Establish a consistent, organized, and respectful learning environment.* When using social-emotional HLPs in the classroom, teachers must provide specific feedback in tandem with teaching social skills, recognizing that social-emotional supports will be more effective in a classroom environment that is consistent, organized, respectful (Lewis, 2019; Talida et al., 2019). Culturally responsive classroom practices that support the social-emotional well-being of culturally and linguistically diverse students with disabilities requires teachers to become aware of extenuating cultural factors that could potentially impact 'teacher-perceived' adherence to classroom expectations, rules, and procedures (e.g., eye contact, addressing the teacher, personal space). Then teachers can appropriately support students in learning the classroom expectations without misunderstandings that can lead to discipline referrals. When establishing a classroom that provides organization, consistency and respect, it is important that teachers post visuals around the classroom that remind students of keywords and procedures, but most importantly, take time to explicitly teach the expectations, rules, and procedures by providing examples and non-examples, modeling, and opportunities for practice.

Instruction

Special education teachers implement a variety of instructional strategies to meet students' needs, "effective special education teachers are well-versed in general education curriculum, use appropriate standards, learning progressions, and evidence-based practices, in conjunction with specific IEP goals and benchmarks to prioritize long- and short-term learning goals to plan instruction" (McLeskey et al., 2017, p. 69). Teachers who value diverse perspectives and incorporate students' background, culture, and language to make instructional decisions, will likely have student outcomes that will improve across curriculum and educational settings (McLeskey, et al., 2019. When teachers enable a structured environment that is inclusive of modeling and guiding students through the learning process while simultaneously infusing culturally responsive practices based on specific student needs, learning progression in both short- and long- term academic and/or social-emotional goals have a higher likelihood of occurring (Mariage et al., 2019). This can be accomplished by teachers modeling, guiding and supporting students through newly learned skills. When this is done in a highly structured manner, students can better understand the steps associated in understanding the concept, application of skills, and/or how to successfully and independently complete tasks (McLeskey et al., 2019). There are 12 HLPs that address aspects of effective instruction for students with disabilities (see Table 4).

Table 4

Instruction High Leverage Practices

HLP 11- *Identify and prioritize long- and short-term goals.*
HLP 12- *Systematically design instruction toward a specific learning goal.*
HLP 13- *Adapt curriculum tasks and materials for specific learning goals.*
HLP 14- *Teach cognitive and metacognitive strategies to support learning and independence.*
HLP 15- *Provide scaffolded supports.*
HLP 16- *Use explicit instruction.*
HLP 17- *Use flexible grouping.*
HLP 18- *Use strategies to promote active student engagement.*
HLP 19- *Use assistive and instructional technologies.*
HLP 20- *Provide intensive instruction.*
HLP 21- *Teach students to maintain and generalize new learning across time and settings.*
HLP 22- *Provide positive and constructive feedback to guide students' learning and behavior.*

Focus Instruction on Critical Content. "Explicit instruction requires systematic planning that focuses on skills, strategies, concepts, or rules that can be generalized across content and settings and should match the students' instructional needs and empower them for future academic

success" (Archer & Hughes, 2011, p. 2). Therefore, when teachers use HLP 12- *Systematically design instruction toward a specific learning goal,* they are selecting specific skills that are frequently used and are logically sequenced. This is especially beneficial for students with disabilities as it reduces cognitive load as it focuses on the most critical content and breaks down complex learning into smaller instructional chunks (Hughes et al., 2019). Focused instruction is also a form of a specialized scaffold for CLD students and can include references to the students' background or culture when providing examples or explaining new concepts. Teachers can systematically design instruction by incorporating aspects from the cultures of the students in the classroom into their instruction. This can include intentionally choosing books with characteristics that resemble the students in the classroom or integrating some of the symbols and common phrases from the cultures represented in the classroom into the lessons while providing direct instruction.

HLP and CRE Alignment

Improving academic outcomes for CLD students with disabilities requires intentional integration of academic and social-emotional strategies that support the variety of cultures represented in the classroom as well as students' individual needs. All teachers (general and special education) must have expertise in delivering academic and social-emotional instruction and interventions in a culturally responsive manner (Klingner et al., 2016). Incorporating aspects of a student's culture into the lesson design and delivery helps CLD students have a better understanding of new concepts being taught by providing scaffolded support by building upon prior knowledge (Aronson & Laughter, 2016; Klingner et al., 2016). Incorporating HLPs into daily classroom practices through systematically designed instruction has the potential to substantially improve outcomes for students with disabilities and others who struggle to succeed in school and can be used as the foundation for CRE to effectively meet the needs of CLD students and those who have a disability (Konrad et al., 2019; McLeskey et al., 2017). Planning for and utilizing HLPs in tandem with CRE can be done by creating lessons that are centered upon the students' academic and cultural backgrounds and intentional inclusion of elements of culture into every lesson which supports scaffolding and the student's understanding of the new concept being taught (Mariage et al., 2019).

Ms. Sullivan already knew that HLPs were effective practices for students with disabilities and decided to focus even more on incorporating effective practices for CLD students into what she was already doing. Ms. Sullivan created a chart to align the elements of HLPs with ways that she could embed specific CRE practices (see Table 5).

Table 5
Sample HLP and CRE integration

High Leverage Practice (HLP)	Culturally Relevant Education (CRE)	HLP and CRE Integration Strategies for the Classroom
HLP 3- *Collaborate with families to support student learning and secure needed services*	Identify ways that the school culture (e.g., values, norms, and practices) is different from students' home culture	Acknowledge and respect the different family compositions of the students in the classroom

HLP 4- *Use multiple sources to understand strengths & needs*	Assess student learning using various types of assessments	Include family interviews & surveys as a part of data collection
HLP 7- *Establish a consistent, organized, and respectful learning environment*	Implement strategies to minimize the effects of the mismatch between students' home and school culture	Learn positive words/phrases in the native language of the students in the class and encourage all students to use them.
HLP 12- *Systematically design instruction toward a specific learning goal*.	Use students' cultural background to help make learning meaningful	Use instructional materials that are sequenced and scaffolded and include representations of different cultures of students in the classroom during instruction.

Ms. Sullivan systematically designed instruction to focus on a foundational skill that matched the instructional needs of her students. She also used the information that she learned during the friends and family luncheon and from the student questionnaires to help guide her planning to further incorporate HLPs and CRE. For example, she chose a book titled, 'The Kite of Dreams' by: Pilar Lopez Avila & Paula Merlan that included characters from all over the world, as part of the materials used in her lessons. Ms. Sullivan also examined her instructional practices. While she encourages all students to be actively engaged during her explicit instruction lessons by responding verbally to her prompts and questions, she learned through conversations with Rama's family that in their culture the adults are to be respected and responding or speaking during instruction is considered disrespectful. Ms. Sullivan wants to be respectful of Rama's cultural norms while still utilizing HLPs. Thinking through a CRE lens, she decided to incorporate a non-verbal response option for all students to use during instruction that included response cards that displayed "agree," "disagree", "I understand" and "I am confused" in each student's native language to support the diverse languages of the students in her small group.

Ms. Sullivan plans to continue to expand upon her instructional alignment by systematically embedding additional HLPs and CRE practices into her small groups one lesson at a time. She knows that in order to effectively do this, it will take time and she will have to continue her professional development in both HLPs and CRE.

Conclusion

It is a necessity that all teachers understand how to systematically embed, teach, and support CLD students with disabilities through a culturally responsive lens as a method to become better advocates and teachers for their students. Being an effective teacher and a culturally responsive teacher are not mutually exclusive concepts; however, it does take intentional effort to achieve both. In fact, "There is nothing more important to providing outcomes for students with disabilities and others who struggle in school than improving the practice of their teachers" (McLeskey et al., 2019, p. 329). When teachers provide high quality academic and social-

emotional instruction that meets the needs of students in their classroom by integrating knowledge of contextually relevant curricula (e.g. CRE) to link a connected understanding to learning standards, progression, and the student's individual education plan (IEP) requirements, students will be more successful (McLeskey et al., 2019, pg. 143). Research based instructional strategies, such as the HLP and CRE strategies discussed, have been shown to greatly improve the academic achievement of culturally and linguistically diverse students with disabilities (Gay, 2013; Hughes et al., 2017; Ladson-Billings, 1995). Because many of the components of CRE overlap with the components of HLPs, teachers can intentionally combine their components to enhance educational outcomes for all students in a classroom (Aronson & Laughter, 2016; Klingner et al., 2016), however, it is important to remember though, that "given the complexity of the high leverage practices, gaining expertise related to their use should continue well into a teaching career" through "collection of student data and observation of how the practices influence student outcomes" (McLeskey, et al., 2019, p. 328). Teachers can continue to learn and expand their knowledge of HLPs and CRE strategies by using the additional resources provided below in Table 6 to aid in planning and teaching.

Table 6
Resources to Support HLPs and CRE

HLP Resources	**CRE Resources**
Video demonstrations of HLPs in action: ● https://highleveragepractices.org/welcome-our-new-series-high-leverage-practices	IRIS Center Cultural and Linguistic Difference: What Teacher Should Know Module ● https://iris.peabody.vanderbilt.edu/module/clde/#content
IRIS Center Explicit & Systematic Instruction: ● https://iris.peabody.vanderbilt.edu/module/math/cresource/q2/p04/	CEEDAR Center Culturally Responsive Webinar: ● https://ceedar.education.ufl.edu/high-leverage-practices-in-georgia/#webinars
Intensive Intervention Course Content: Features of Explicit Instruction ● https://intensiveintervention.org/intensive-intervention-features-explicit-instruction	Teaching Tolerance: Being Culturally Responsive: ● https://www.tolerance.org/professional-development/being-culturally-responsive
Archer, A.L., & Hughes, C.A. (2011). *Explicit instruction: Effective and efficient teaching.* Guilford Press.	Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice.* Teachers College Press.
McLeskey, J., Maheady, L., Billingsley, B., Brownell, M.T., & Lewis, T.J. (2022). *High leverage practices for inclusive classrooms.* Routledge.	Ladson-Billings, G. (2009). *The dream keepers: Successful teachers of African American students*. Jossey-Bass.

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About the Authors

Toni Franklin, Ph.D. is an Associate Professor of Special Education at Columbus State University in Columbus, Ga. Her research focus is on the preparation of general and special education teachers to support culturally diverse students with disabilities in inclusive settings.

Maria B. Peterson-Ahmad, Ph.D. is an Associate Professor of Special Education at Texas Woman's University with research concentration in teacher preparation, particularly for general and special education teachers of students with mild/moderate disabilities. Additional research interests include technology to support teacher preparation and high-leverage practices.

A Brief Report on Teacher Mask Wearing and Learning in Children with ASD

Makayla Heisler, M.S., BCBA
Jennifer Gillis Mattson, Ph. D., BCBA-D
Rachel N. S. Cavalari, Ph. D., BCBA-D

Institute for Child Development
Binghamton University

Abstract

There is a rich literature on effective instructional practices for children with Autism Spectrum Disorder (ASD). When some schools resumed in-person instruction during the COVID-19 pandemic, mask wearing was required by teachers, therapists, and students. Given limited literature on the importance of attending to the mouth during interactions for children with ASD, it was unclear if wearing a mask that covered the mouth would impact learning. A brief systematic assessment was conducted to examine the impact of a mask on learning in four children with ASD. Results showed that mask wearing did not appear to impact learning.

Keywords: ASD, autistic children, masks, school, special education, mask wearing, COVID-19 pandemic

A Brief Report on Teacher Mask Wearing and Learning in Children with ASD

It is well documented that many students with Autism Spectrum Disorder (ASD) often need additional support**,** such as individualized instructional strategies**,** to learn important skills at school, including social skills. Individualization of instructional strategies involves a range of variables, including material selection, performance requirement, delivery of instruction (e.g., computer, teacher, worksheet), and feedback. These different variables can impact student learning rates (e.g., Cariveau, Kodak, and Campbell, 2016). In addition to instructional strategies and associated variables, environmental stimuli may also affect acquisition rates for students with ASD. Conroy et al. (2007) evaluated the effect of environmental stimuli (including proximity of an instructor, instructional setting, activity, and materials) on disruptive behavior of students with ASD. Their findings indicated that systematically altering these stimuli had variable effects on student disruptive behavior and**,** thereby**,** possibly impacting the level of orientation to and engagement in varying instructional activities.

The current Coronavirus Disease 2019 (COVID-19) pandemic introduced significant changes to how all individuals interact with one another, including social distancing and mask requirements. Professional and paraprofessional direct care staff at a school for children with ASD expressed concerns about the impact of wearing a mask that would occlude one's mouth. At the time of the study, it was unclear whether masks that covered the mouth, in particular, might negatively impact learning and social interactions of children with ASD (Bellomo et al., 2020; Conroy et al., 2007). Masking the mouth of the speaker is a salient environmental change: the instructor's mouth is now occluded and hearing the instructor's voice may be more difficult during instructional time. The purpose of this study was to compare use of a cloth mask versus the use

of a mask with a transparent plastic mouth window to determine if viewing the mouth affected learning to answer social questions for children with ASD.

Method

Participants

Participants included four students who attended a special education school that provided both in-person and virtual instruction throughout the COVID-19 pandemic. The inclusionary criteria were orienting to a speaker during instruction and a demonstrated mastery of answering at least five simple social questions allowed for examination of the influence of the mask on acquisition of new social questions. Pseudonyms were used for all participants.

Aiden was an African American boy aged six years old. Aiden used vocal communication to answer questions and communicate his needs and presented with some echoic speech. Daniel was a white, non-Hispanic five-year old boy who used vocal communication and was reported to respond to novel questions using full sentences. Eric was a white, non-Hispanic seven-year old boy who used an iPad with a communication app to communicate and had mastered item identification and answering simple social questions with a visual cue. Arlo was a Hispanic, five-year old boy who used vocal communication to communicate his wants and needs and to respond to social questions.

Design

An alternating treatments design was used to assess acquisition rates of novel social questions in two conditions where staff wore different types of masks. For the cloth mask condition, the staff member wore an all-black cotton mask that completely covered their nose and mouth. In the clear mask condition, the staff member wore a black cotton mask with a transparent opening 3.2 inches wide by 2 inches high, allowing the entirety of the staff member's mouth to be visible. The dependent variable was the percentage of correct responses to social questions in a teaching session.

Novelty Session. In order to decrease any effects of introducing the two types of masks, novelty sessions were conducted prior to baseline. Specifically, the staff member alternated wearing the masks used in the cloth and clear conditions for ten minutes each during toy play and social activities with all participants. The order of wearing the cloth and clear masks were counterbalanced across participants.

Baseline and Acquisition Sessions. One baseline and six teaching sessions for each mask condition were completed with each participant over a five-week period (i.e., two baseline sessions and 12 teaching sessions). Baseline and teaching sessions were each five minutes in length for each mask condition. One staff member conducted all sessions with each participant. The staff member holds a Master's degree and is a Board Certified Behavior Analyst (BCBA) with experience teaching children with ASD. In baseline sessions, no feedback was given following a participant's response. Acquisition sessions were conducted as detailed below.

Setting and Materials

All sessions were conducted in the participant's respective classroom during times in which they would typically be engaged in academic-based activities. The third participant was nonverbal and used a laminated sheet of paper with all correct responses presented on it to respond (point) to the social question. Additional materials such as an array of pictures were introduced, if necessary, for acquisition.

Preferred toys were included as part of all teaching sessions. These items were determined by classroom staff-reported preference and asking each participant what they would like to play with at the beginning of each session. Some of these toys included blocks, playdough, toy figurines, and toy food.

Procedure

Social questions were chosen based on what would be socially and developmentally appropriate for the participants and in alignment with the participants' IEP goals. The specific questions selected were those that could be asked across all participants. Questions were grouped in sets, based on mask type. Questions included in each mask type condition were determined to be equivalent based on consultation with the participant's special education teacher. The answers to the social questions were provided by classroom teachers based on observations and consultations from school records. The questions asked for each participant can be seen in Table 1.

Table 1
Social Questions for Each Mask Condition

Mask Condition	Social Questions
Clear	What is your favorite food? What is your favorite color? What do you like to play outside? What's your favorite song? What's your teacher's name?
Cloth	What's your friend's name? What do you like to play with [inside]? What do you like to watch on TV? What's your favorite part of school? How old are you?

Note. Aiden responded correctly to the question, "What's your teacher's name" during baseline, so his question was "Who brings you to school?"

In each teaching session, 15 opportunities were presented, with three presentations of each of the five questions interspersed with a play activity chosen by the participant. Play was initiated at the beginning of the session with the staff for approximately one minute. Then, the social questions were presented verbally and required verbal responses for three participants, and through receptive identification (pointing) to a picture by Eric. After a set of five questions, each

participant was allowed to engage with a preferred toy item they previously selected before the next set of questions started. For correct responses to the social questions, participants received specific verbal praise. If a participant answered a question incorrectly, least-to-most verbal prompting was implemented. Least-to-most prompting was used as this prompting method has shown to be effective in transferring stimulus control to the natural discriminative stimulus (i.e., the social question). For Aiden, David, and Arlo, staff modeled the response verbally following an error (no additional prompts were required). For Eric, a similar error correction procedure was used with gestural (pointing) and physical prompts.

Mask-wearing acceptability assessment

To better understand staff's general perceptions of wearing the clear mask, classroom staff (i.e., special education teacher, teacher aides/assistants, speech language pathologists, occupational therapists, etc.) wore both the cloth and clear masks. This was also done to facilitate the adoption of clear masks if the results from the present study suggested that clear masks would be beneficial for learning. The staff who wore the masks were not in the same classrooms where the learning assessment was conducted. Staff alternated wearing the cloth and clear masks (identical to those used in the present study) following a schedule provided by the researchers. Staff wore each type of mask for a total of eight, 30-minute sessions, counterbalanced by mask type. At the end of the assessment, staff were asked to complete a brief survey about their experience.

Results

Aiden

During baseline, Aiden correctly answered more social questions in the cloth mask condition (33% correct) compared to the clear mask condition (6% correct). Across the first four sessions in the acquisition phase, Aiden's percent correct responding was variable for both conditions. There was a two-week holiday break between the baseline session and first four acquisition sessions, with another week break between session four and five due to an unexpected transition to virtual services related to pandemic precautions. Percent of correct responses ranged from 6% to 66% (M = 35.83, SD = 27.38) within the cloth mask condition and 27% to 60% (M = 45.5, SD = 16.03) in the clear mask condition. The percentage of correct responses did not increase above 66% in either the cloth or clear condition. See Figure 1.

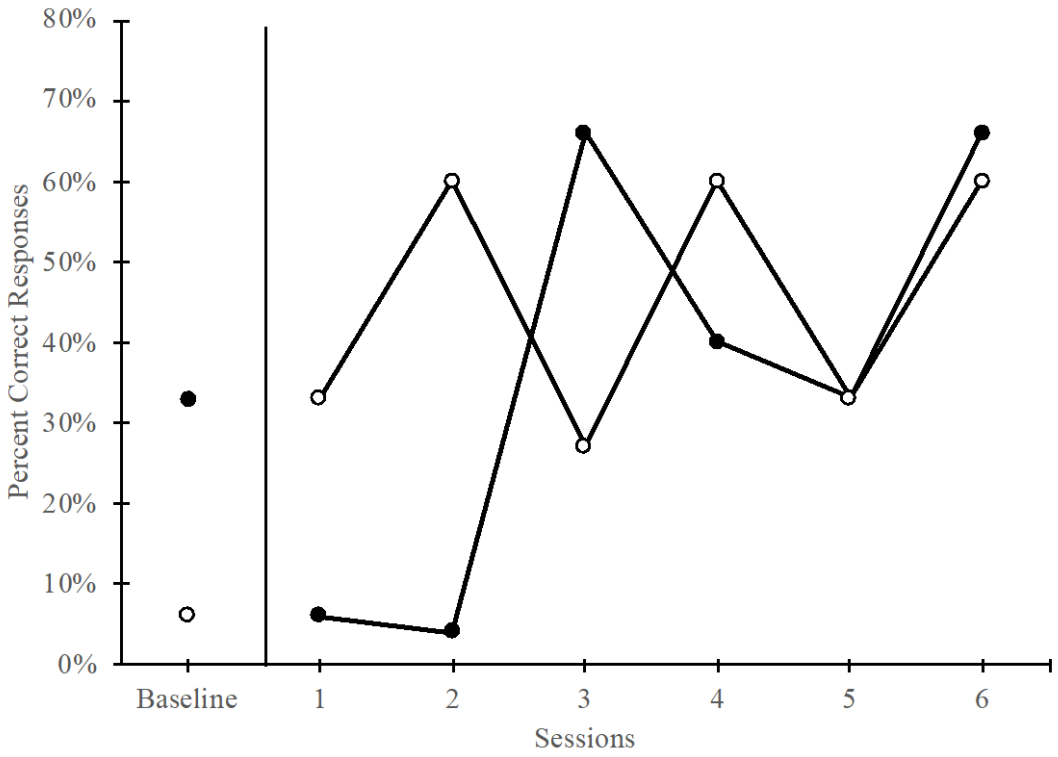

Figure 1. The above graph shows Aiden's percent correct response to novel social questions**.** The clear mask condition is represented by the solid data points; the cloth mask condition is represented by the open-circle data points.

David

The baseline session conducted for the cloth mask indicated 40% correct responses. The clear mask condition resulted in 60% correct responses in baseline. Between session five and six there was a one-week holiday break. Across six sessions, David's performance ranged from 40% to 93% correct (M = 66.3%, SD = 22.67) in the cloth mask condition; whereas, in the clear mask condition the range was 46% to 80% correct (M = 66.5, SD = 15.43). Percentage of correct responses increased across acquisition sessions in both mask conditions. The percentage of correct responses in the sixth session of the clear mask condition was somewhat lower than previous sessions. There appeared to be small differences in performance between the clear and full cloth mask conditions. See Figure 2.

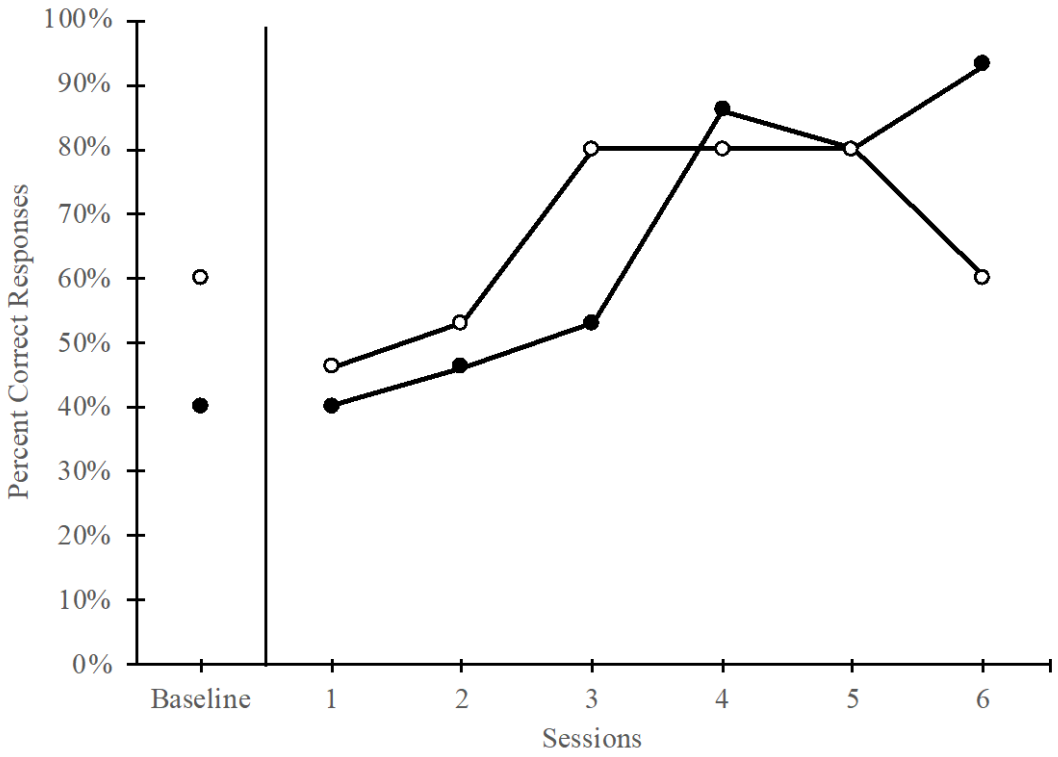

Figure 2. The above graph shows David's percent correct response to novel social questions**.** The clear mask condition is represented by the solid data points; the cloth mask condition is represented by the open-circle data points.

Eric

Eric's performance in the baseline session was 33% correct responses in the cloth mask and 13% in the clear mask condition. During acquisition, percent correct responses for the cloth mask condition ranged from 7% to 73% (M = 36.17, SD = 22.7) and 0% to 60% (M = 34.33, SD = 24.67) for the clear mask condition. Between sessions four and five there was a one-week holiday break. Sessions one through four were presented with a picture sheet containing pictures of all five possible responses separated by condition. Eric's performance was variable and no differentiation was shown between the two mask conditions. At session five, the array of pictures was reduced to two given Eric's performance. This change increased percent correct responses in each mask condition. See Figure 3.

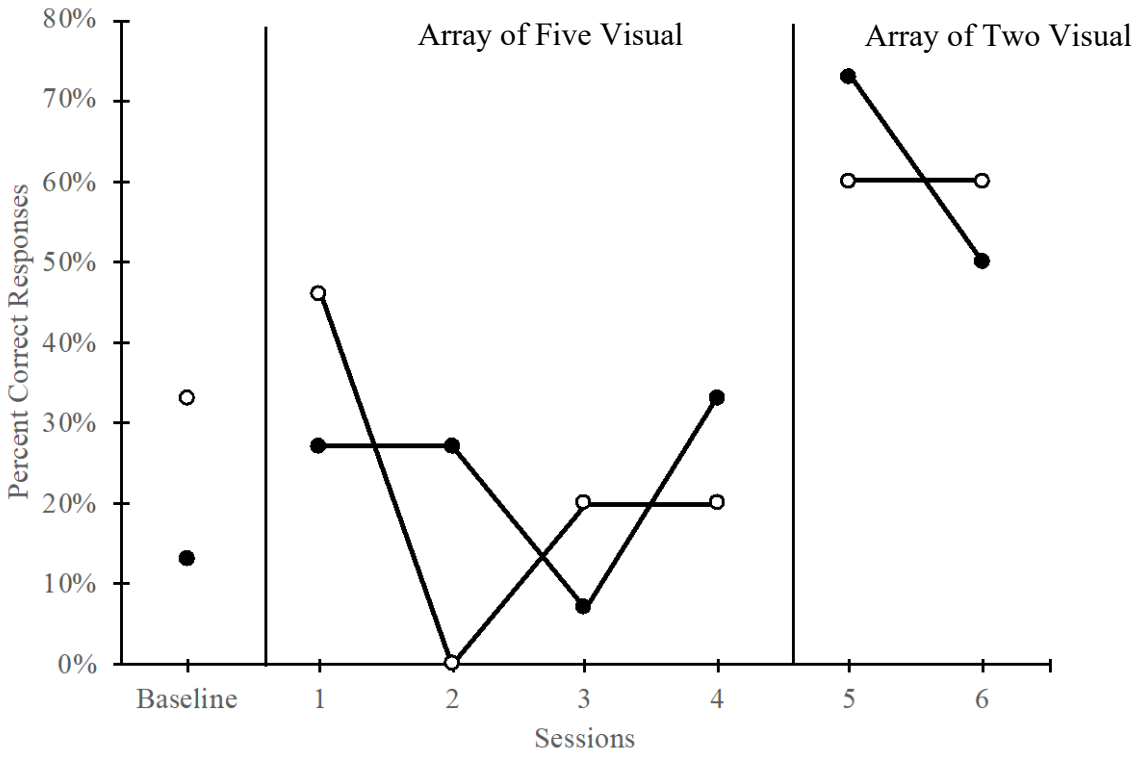

Figure 3. The above graph shows Eric's percent correct response to novel social questions**.** The clear mask condition is represented by the solid data points; the cloth mask condition is represented by the open-circle data points.

Arlo

For both the cloth and clear mask conditions, baseline performance was 0% correct. Percent correct for the cloth mask condition ranged from 7% to 80% ($M = 27.83$, $SD = 26.82$) and percent correct in the clear mask ranged from 0% to 73% ($M = 15.33$, $SD = 28.72$). At session six, a visual cue (i.e., pictures) was implemented to increase acquisition and rule out floor effects, as performance was somewhat stable with no improvement. Percent of correct responses in session 6 significantly increased in both conditions after the introduction of the visual cue. There was a one-week holiday break between session four and five. Within all six sessions the percentage of correct responses was slightly higher in the cloth mask condition than the clear mask condition.

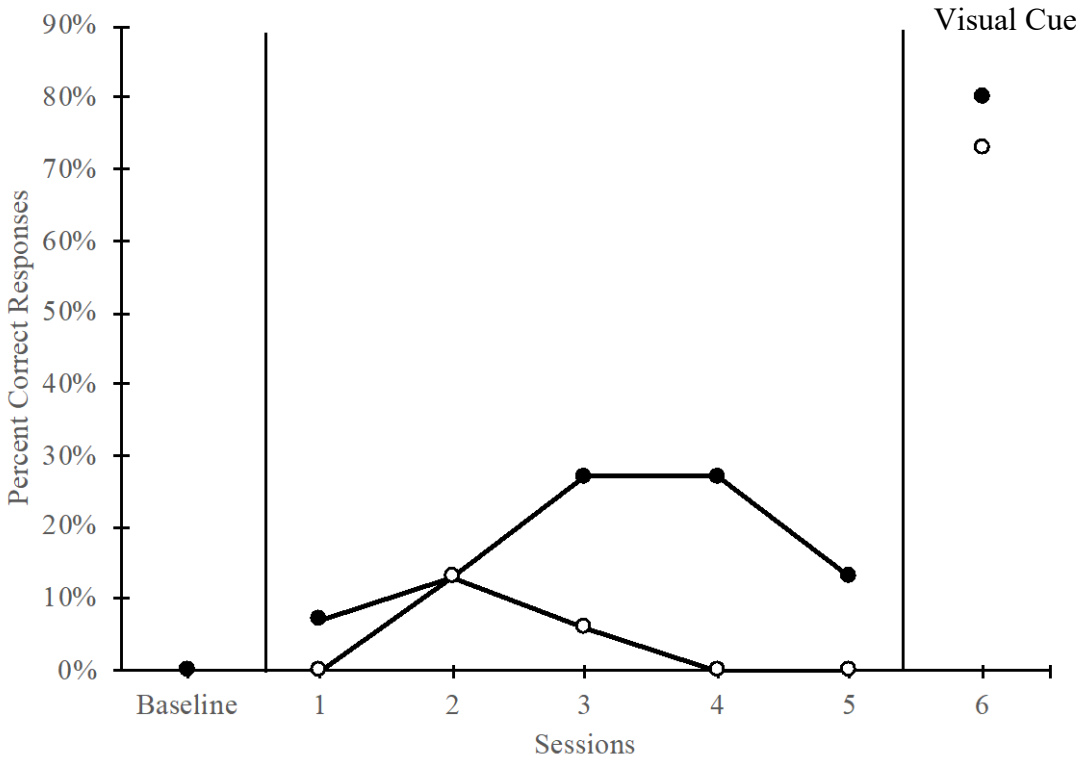

Figure 4. The above graph shows Arlo's percent correct response to novel social questions**.** The clear mask condition is represented by the solid data points; the cloth mask condition is represented by the open-circle data points.

Mask-wearing acceptability assessment

Four of eight staff completed the brief survey inquiring about their experience with wearing the cloth and clear masks. Three of the four staff reported the clear mask was slightly uncomfortable and one staff indicated it was not at all comfortable. All four staff indicated a preference for the cloth mask over the clear mask. When asked about the level of child engagement when wearing the clear and cloth masks, all staff reported perceiving children's amount of engagement and learning as similar for both types of masks.

Discussion

The COVID-19 pandemic has challenged traditional approaches to student learning and barriers to instruction. There was no prior anecdotal experience or scholarly literature regarding mask wearing to guide staff's decision on which type of mask to wear. The purpose of this study was to compare learning of novel social questions in an instructional setting for children with ASD when a staff person wore two different types of masks at the start of the COVID-19 pandemic. Improvement in answering social questions was observed for some children; however, no pattern of improvement due to the mask type was determined. Overall, it appears that the type of mask did not alter the child's ability to attend to the staff member's instructions during sessions regardless of task performance.

One reason for the lack of differentiated responding between mask conditions could be due to distractions within the educational setting that were consistent across all sessions. Another reason for similar levels of learning could be that per staff's self-report, there were no perceived changes in the level of child engagement and learning while staff wore different masks. Taken together, learning to correctly respond to novel questions did not appear to be better during either of the two mask conditions.

This report is not without limitations, as it was designed to be conducted within the familiar classroom setting and interobserver agreement or procedural fidelity checks were not included. In addition, there were several days in which the school unpredictably transitioned to virtual instruction, limiting continuity of in-person assessment for this particular task. Future research should continue to explore the impact of mask wearing in other specialties, such as in speech therapy (e.g., articulation) where a focus on the therapist's mouth is presumed to be necessary.

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About the Authors

Makayla Heisler, M.S., BCBA, is currently the Coordinator of Behavioral Health and Training at the Institute for Child Development at Binghamton University. Ms. Heisler has expertise in Applied Behavior Analysis, special education support, the Early Start Denver Model, and behavioral skills training. Her interests include improving learning efficiency for autistic youth; provider training; and, multidisciplinary data-based collaboration.

Rachel Cavalari, Ph. D., BCBA-D, is a licensed psychologist and licensed behavior analyst who presently serves as the Director of the Children's Unit for Treatment and Evaluation at the Institute for Child Development and Director of Diagnostic Services at the ICD Child & Adolescent Diagnostic and Consultation Clinic. Dr. Cavalari's research expertise and interests include safety and supervision for autistic individuals as well as family training, systems support, and mental and physical well-being of autistic individuals and their caregivers.

Jennifer Gillis Mattson, Ph.D., BCBA-D, is a Professor in the Department of Psychology at Binghamton University and Co-Director of the Institute for Child Development. Dr. Gillis Mattson's research interests are in the areas of school absenteeism, wellness of autistic individuals, service providers, and families, and inclusive practices in school and community settings.

Art Therapy and Autism: A Picture of the Literature

Caroline Guardino, Ph.D.
Rebekah Wallis, M.Ed.
Arien Peppers Harrison, M.Ed.
Morgan Green, M.Ed.

The University of North Florida

Abstract

Art therapy is an alternative therapeutic intervention implemented with individuals with autism spectrum disorders (ASD). Researchers, therapists, and parents suggest that art therapy is an effective treatment for targeting social and communicative behaviors. However, there is a paucity of evidence-based research to support this claim. A systematic literature review of peer-reviewed studies was conducted to determine the effect of art therapy on students with ASD, ages 4-21 years. Nineteen studies met the inclusion criteria. A summary and analysis of the research are presented with specific strategies and outcomes of art therapy identified as an effective treatment method. Nine of the studies reviewed are of qualitative design: observational case studies with one or two participants; with the remaining six studies using quantitative research methods. Implications for researchers and practitioners are discussed.

Keywords: autism, autism spectrum disorder, art, art therapy, intervention

Art Therapy and Autism: A Picture of the Literature

A recent report by the Centers for Disease Control and Prevention estimates that 1 in 36 children have been identified with ASD (CDC, 2023). Children with ASD may exhibit challenges with communication, social skills, and demonstrate repetitive or restrictive behaviors or interests that affect daily functioning (American Psychiatric Association, 2013). These characteristics often require intensive social and behavioral interventions administered within a school or clinical setting. Given the steady increase in the prevalence of ASD, teachers must have knowledge of evidence-based interventions to be prepared to meet the needs of these students. There are several evidence-based interventions commonly used in the provision of services for students with ASD; the most common of which is applied behavior analysis (Boyd et al., 2012; Reichow & Volkmar, 2010). There are also alternative interventions such as sensory integration, animal, music, theater/performing arts, and art therapy. Literature reviews examining the effectiveness of these alternative interventions with students with ASD have been conducted: sensory integration therapy (Lang et al., 2012), animal therapy (Bert, et al., 2016; Davis et al., 2015; O'Haire, 2013), performing arts (Sampurno, 2019), and music therapy (De Vries, et al., 2015; James et al., 2015; Simpson & Keen, 2011). However, a comprehensive review of the literature about art therapy as a treatment for ASD has not been published. Although Gazeas (2012) provides an overview of six publications about art therapy, their review solely focuses on the efficacy of these studies in relationship to five areas (e.g., ability to relate, socialize, joint attention, portrait drawings, and the interactive square model) rather than reviewing the entire body of research surrounding art

therapy and ASD. A comprehensive literature review is needed in order for researchers, therapists, and parents to determine if art therapy is a viable intervention for students with ASD.

History of Art Therapy

Art therapy is an intervention that has been in practice since the 1940s and has consistently been used with individuals with behavioral and emotional needs (Dunn-Snow & D'Amelio, 2000; Durrani, 2014). The foundations of art therapy originate in the psychoanalytic theories of Sigmund Freud and Karl Jung in which they contended that imagery has therapeutic relevance to one's unconscious (Durrani, 2014). Beginning in the 1940s, art historian Margaret Naumburg and art teacher Edith Kramer used these principles to birth the craft of art therapy and are currently known as the first art therapists (Dunn-Snow & D'Amelio, 2000). Since the inception of art therapy, this intervention has developed into a complex practice with ties to psychoanalytic theory, as well as cognitive, existential, behavioral, and phenomenological therapy models (Durrani, 2014; Durrani, 2019; Martin, 2009b). In comparison with other common treatments for children with ASD that focus primarily on behavior or cognition, art therapy tends to address social and emotional development, a much needed area of research given the social challenges individuals with ASD often experience (Durrani, 2014; Sampurno, 2020). By using visual and tactile modalities, art therapy allows for nonverbal and symbolic communication by the participants (Betts, 2005). Essentially, art therapy provides an avenue for participants to use various forms of art to accomplish targeted goals set between the therapists and participants.

Art Therapy and Autism

Although few peer-reviewed studies have been conducted evaluating the effectiveness of art therapy as an intervention for persons with ASD (see Table 1), advocates of art therapy report several benefits in the domains of communication skills and social-emotional development. In addition, art therapy has many positive attributes such as providing a therapeutic intervention that is flexible and non-threatening. Given the variety of mediums available within the scope of art (e.g., painting, drawing, pottery), sessions can be individualized to meet the diverse needs of children with ASD (Durrani, 2014). For example, art therapy can be based on shared or independent art experiences and can include finger or brush painting, clay molding, or drawing with pencils or markers. Given the flexibility and visual nature of art, this type of therapy is of high interest to children with autism and presents as non-threatening, which may positively affect willingness to participate in the intervention activities. During art therapy sessions, clients are frequently given the option of engagement or withdrawal and can alternate between independence and interaction, especially when the art therapist is participating in the creative process. Art therapy is child-driven and can become an avenue for self-expression and self-regulation; in turn, replacing negative behaviors for children who exhibit outbursts or other inappropriate manifestations of frustration or distress (Durrani, 2014; Epp, 2008; Sampurno & Camelia, 2019; Schweizer et. al. 2020).

Many professionals and parents report several benefits of using art therapy with children who have ASD (Betts, 2005; Durrani, 2014; Martin, 2009b; Schweizer et. al. 2020). Art therapists understand that the therapy they provide is an individualized service, different from when an art teacher instructs a class of students (Martin, 2009b). Professionals opened the first Aurtism therapy studio with a clear mission to use art as therapy, "Our mission at Aurtism is to help each individual gifted with autism with a facility to express themselves individually through Art and

improve social skills in an interactive environment (Aurtism, 2019).” Some parents have publicly highlighted the successes they have seen with art therapy used as an intervention with their children. One parent discusses how art therapy has aided in the improvement of her son’s motor and communication skills in a video produced by Real Look Autism (2013). Another parent created a video to declare that her nonverbal daughter with autism was able to use art to communicate and subsequently observed an increase in their daughter’s self-esteem (Groshell, 2012). In a study by Jalambadani (2020), mothers and their children with ASD participated in a simultaneous art therapy study that resulted in increased adaptive behaviors, emotions, and increased social interactions amongst the mother-child dyads. Some individuals with ASD have also expressed favorable opinions about art therapy. A person with Autism Spectrum Disorder posted in an online forum for persons with ASD about a positive experience she had with art therapy as a treatment for anxiety and depression while attending college (nikaTheJellyfish, 2014).

Challenges with Art Therapy as an Intervention

The field of art therapy is relatively small with few art therapists specializing in the treatment of persons with autism (Martin, 2009b). Researchers suggest increased collaboration amongst art therapists, teachers, parents, and other professionals who provide services to students with autism would be beneficial (Dunn-Snow & D’Amelio, 2000). However, there are legal limitations that cause hurdles for stakeholders to access and attempt art therapy as an intervention for autism.

Art therapy is typically considered to be an alternative or complementary intervention and is not included in the current version of the Individuals with Disabilities Education Act as a related therapy (Martin, 2009b; United States Department of Education, 2004). Perhaps one reason that art therapy is not covered under IDEA is the absence of a strong research base to support the aforementioned claims. Although art therapists are required to have a graduate level degree and often complete a national certification process, not all states recognize their certification (American Art Therapy Association, 2014). Consequently, caregivers often have difficulty receiving insurance or government reimbursement for art therapy services. This may limit the social, behavioral, and communicative intervention options of families with children who have ASD (Martin, 2009b). Researchers agree there is a critical need for additional empirical studies on art therapy as a valid and reliable intervention tool (Durrani, 2014; Martin, 2009b).

Given the absence of a strong research base supporting the use of art therapy as an intervention for autism, specifically studies using quantitative designs, further examination of the existing literature is needed. The authors conducted a comprehensive and systematic review and analysis of the available literature on the effectiveness of art therapy as a treatment for autism on targeted behaviors. We address the following research questions:

1. How many studies were discovered in peer-reviewed literature with a focus on art as a therapeutic intervention for students with ASD between the ages of 4-21?
2. What are the overall strategies used when implementing art therapy with students with ASD?
3. When using art therapy with learners with ASD, what are the most common goals and effective outcomes reported in the literature?

Methods

A systematic search was conducted using the PsychINFO and ERIC databases and the OneSearch searchable index. Studies that met the following four inclusion criterion were included in the analysis: (1) peer-reviewed study analyzing art therapy as a treatment for autism, (2) participant(s) were identified as having ASD and were between the ages of 4 and 21, (3) art therapy was the primary intervention used in the study, and (4) the study was written in or translated to English. The age parameters were selected to represent the ages of students served in school settings. The year of publication was not used as selection criteria given the limited research available and the early inception of art therapy as an intervention.

The following procedures guided the search:

1. An initial search took place in which a combination of the terms "autism," "autistic," "art," "art therapy," and "literature review" were entered into the databases.
2. The following search terms were combined utilizing the previously stated databases: (autism OR autistic) AND "art therapy". Art therapy was placed inside of quotation marks to limit results to publications specifically about art therapy as opposed to artistic talent among students with ASD or art education.
3. Database-specific parameters were selected to narrow the search results to include only peer-reviewed articles and to limit the subject to autism, art therapy, and/or pervasive developmental disorders.
4. Upon selection of the studies, a bibliographic search was conducted from the references of selected sources to identify additional literature that met the criteria for selection. Articles that did not meet inclusion criteria but provided information about art therapy and autism were helpful in identifying additional studies that fell within the selection parameters (e.g., Martin, 2009b).

Articles that met the inclusion criteria are summarized in Table 1 using seven features of the study: author(s), publication year, research design, targeted skills or behaviors, participant(s), setting, methodology, and results. Data from the articles were qualitatively analyzed and reported in narrative form. Table 2 provides an overview of the participant outcomes for each study categorized by two domains: language-communication and social-emotional.

Results

The database searches revealed over 1400 articles; however, only fifteen studies met the inclusion criteria, and four additional studies were identified through bibliographic searches; resulting in a total of nineteen studies. Ten of the nineteen studies evaluated art therapy as a treatment for a single participant with ASD. Whereas with the remaining nine studies the researchers conducted interventions with two or more participants.

An analysis of the nineteen studies revealed a variety of strategies and goals that yielded positive outcomes as reported by art therapists through evaluation of their observation therapy notes (see Table 1). Child-centered and therapist-initiated approaches were used to target goals in the domains of social-emotional and language-communication skills; these two approaches are the focus of the following discussion.

Table 1

Summary of Included Studies

Author(s)	Design	Targeted skills	Participant Characteristics	Setting	Duration & Method	Outcomes
Bentivegna, Schwartz, & Deschner (1983)	Qualitative: observational case study	Social and emotional	1 child with ASD, age 6-7, poor eye contact and language skills	Residential facility for children with disabilities	Observation over two-year period	Increase in social, emotional, and language skills
Bragge & Fenner (2009)	Qualitative: observational case study	Social	2 children with ASD, ages 7 (high-functioning with severe outbursts) and 12 (nonverbal)	School for children with disabilities	Observation during six video-recorded sessions	Increase in social and language skills
Chou, Lee, & Feng (2016)	Quantitative: multiple probe design	Social	2 6-year-old children with ASD, both had basic communication skills	Behavioral treatment center	Observation over 17 sessions	Increase in verbal communication, eye contact, and presentation of artwork.
D'Amico & Lalonde (2017)	Quantitative: pre-post-survey design	Social	6 children ages 10-12 year-olds, adequate language skills	Research center	75 group sessions over 21 weeks	Increase in assertion, with a decrease in inattention
Durrani (2014)	Qualitative: observational case study	Social	1 child with ASD, age 12, nonverbal	Private therapy office	Observation over one-year period	Increase in social, emotional, and language skills
Elkis-Abuhoff (2008)	Qualitative: observational case study	Social and emotional	1 adolescent with ASD, age 17-18, social anxiety	Private therapy office	Observation over seven-month period	Increase in social, emotional, and language skills
Emery (2004)	Qualitative: observational case study	Social and language	1 child with ASD, age 6, average IQ, poor language skills	Private therapy office	Observation over seven-month period	Increase in social and language skills

Horovitz (1981)	Qualitative: observational case study	Emotional and language	1 child with ASD, age 5, poor speech skills, experienced previous trauma	Therapy setting at children's hospital	Observation over 16-month period	Increase in social and language skills
Jalambadani (2020)	Qualitative: observational case study	Social and emotional	40 children with ASD with IQs 50 and 70 and their mothers	Not reported	12 sessions of simultaneous intervention of mother and child therapy	Participants had more adaptive behavior, showed more emotions and increased social interactions
Koo & Thomas (2019)	Quantitative: pre- and post-test	Social and language	9 children with ASD between 4 and 12 years old	Center for children with ASD	8 30-minute sessions over 10 weeks	Statistically significant difference in overall symptoms of autism including cognitive, social, and motor skills
Kornreich & Schimmel (1991)	Qualitative: observational case study	Social and language	1 child with ASD, age 11-13, anxiety, perseverative behavior	Outpatient community-based child guidance clinic	Observation over 2-year period	Increase in social, emotional, and language skills
McCarthy, Benigno, Broach, Boster, and Wright (2018)	Qualitative: comparative and observational case study	Concept development, identification, and recall	15 children with ASD and 19 children without ASD, ages between 4 and 12 with fine motor skills and basic communication skills	Dedicated laboratory space or home of participant	The drawing sessions were with approximate means of 51.64 to 57.69 minutes long	Overall differences in children with and without ASD were low, although the ASD participants struggled with communication and self-identification. Better identification and recall depended on their age
Malhotra (2019)	Quantitative: pre- and post-test	Social - emotional	16-year-old girl with ASD	Special education day school	12 30-minute sessions over 3-month period	Increases in interpersonal interactions, intrapersonal processes, awareness of others' emotions, and externalization

Parvathi (2020)	Qualitative: single case study	Social, language, and emotional	17-year-old boy with ASD	Participant's school	10 months	Improvements in developing object consistency, building a relationship, idea of closure, and language development
Richard, More, & Joy (2015)	Quantitative: pre- and post-test	Emotional	19 children with ASD between 8-14 years old.	Private elementary school	Observation over one 1-hour session	Statistically insignificant increase in emotion recognition
Rozelle (1982)	Qualitative: Single case study	Social	1 child with ASD, age 7, poor attachment skills	Art therapy within a school setting	Observation for the duration of a school year	Increase in social skills
Scanlon (1993)	Qualitative: observational case study	Social	1 child with ASD age 4, nonverbal	Art therapy within a school setting	Observation over 8-month period	Increase in social, emotional, and language skills
Schweizer, Knorth, Yperen, & Spreen (2020)	Quantitative: pre- and post-test	Social and emotional	12 children with ASD between the ages of 6 and 12	Ambulant mental health care organizations, residential psychiatric centers, or schools for special education	Program consisted of 15 weekly individual 45-minute sessions	7 children improved on flexibility and social behaviors; all children were happier and more stable after treatment
Wright, Benigno, Boster, McCarthy, Coologhan (2019)	Qualitative: Analyses of responses	Language	12 children with and 19 without ASD 4 to 12 years old	Dedicated laboratory space or home of participant	Sessions ranged from 23 to 150 minutes to complete to draw the meaning of 10 concepts	No significant differences between children with and without autism in their use of internal state terms, pronouns, or their use of on- and off-task language during the drawing task

Child-Centered Approach

The child-centered approach occurs when the art therapist defers to the participant to structure the therapeutic session. This approach was implemented in six of the nineteen studies. Participants were given opportunities to lead the sessions by choosing from a variety of materials (e.g., paint, clay or play dough, crayons, markers, colored tissue paper) as well as the subject of their artistic creation. Bentivegna et al. (1983) allowed the participant to use a set of colored Lego blocks as a creative tool; while Emery (2004) and Malhotra (2019) provided puppets to the participant during the art therapy sessions. Scanlon (1993) supplied the participant with fingerpaint, sand, and shaving cream during the art therapy sessions to allow sensory input while engaging in the creative process. Koo and Thomas (2019) allowed their participants to select their art materials freely as well (i.e. drawing, painting, clay or playdough, and craft or collage) when learning about basic art concepts and practicing their motor skills to decrease their challenging symptoms of ASD. Elkis-Abuhoff (2008) used the child-centered approach by engaging the participant in an activity called "a conversation in crayon" (p. 267), during which the therapist and participant interacted by taking turns using a crayon on a piece of paper. This and other art therapy activities resulted in the growth of interpersonal skills (i.e., communication, interactions, and social functioning) in the participant who had been recently diagnosed with Asperger's syndrome (currently defined as Autism Spectrum Disorder in the DSM-5; APA, 2013).

Three of the nineteen studies expanded on the child-centered approach by having the therapist mirror the behavior of the participants to connect with the participants and foster the development of interpersonal skills. For example, in the study by Durrani (2014), the art therapist mimicked the actions of the participant when pouring paint on a piece of paper, moving it with a paint roller, and at times painting together or side-by-side. Rozelle (1982) mirrored the participant's body movements, voice, and drawings in order to connect with the participant. Scanlon (1993) also used "mirroring" by copying the actions of the participant as he skipped and jumped during the initial stages of the therapeutic relationship. The use of mirroring allowed Scanlon to develop rapport that led to successful art therapy sessions (i.e, increased contact and interaction). Eventually, Scanlon built on these experiences by verbally narrating and building upon the movements. In each of these studies, the researchers observed an increase in positive social behaviors among the participants.

Therapists-initiated Approach

The therapist-initiated approach entails the therapist prompting the child to use art as a communicative or emotive tool. Eleven of the nineteen studies explored this approach in art therapy sessions. In three of the nineteen studies, participants were encouraged to illustrate their wants, fears, or feelings. Bentivegna et al. (1983) describes the participant as communicating through his art. The participant drew a picture that demonstrated his desire to watch television. On another occasion the participant drew his fear of spaceships after the therapist guided the drawing. This same method was used by Kornreich and Schimmel (1991). The researchers documented the drawings of the participant after the therapist-initiated sessions; the pictures drawn illustrated his feelings of fear, often producing monsters. This same participant was also instructed to create family portraits throughout the course of the therapy sessions, which became more detailed as his awareness of his family members and social interaction skills increased.

Parvathi (2020) used therapist-initiated Art Based Therapy (ABT) to work on object consistency, relationship to objects, closure, and develop language skills. The participant developed these skills by using a plethora of mediums such as drawing, clay, body movements, and theater. Parvathi and the art therapist used a 5-leveled system to reinforce behaviors through non-verbal expression. In turn, positive outcomes such as ways to express their inner worlds were gradually developed using ABT. Through the use of ABT, the participant became more aware and involved with objects, his surroundings, as well as his peers, and was able to express emotions and develop relationships with the world around him.

Bragge and Fenner (2009) discuss the use of therapist-led shared experiences as a method of altering behaviors demonstrated by a participant who generally chose to draw the same subject at each session. In their study, they prompted the participant to draw different subjects than what the child with ASD normally drew through modeling, narrating experiences, and giving suggestions. With a different participant who was nonverbal, the researchers paired the art therapy session with music and movement to increase social interactions. Toward the end of the six-session period, this participant demonstrated a desire to interact with the therapist by grasping the hands of the therapist.

Chou et al. (2016) used therapist-led activities in a behavioral treatment center in Taiwan to encourage participants to share their artwork with others to increase student-initiated communication. Criteria for correctly presenting artwork included: (a) introducing themselves, (b) stating the topic of their artwork, (c) describing the artwork, (d) and providing a closing statement to their presentation. Maintaining eye contact was also encouraged, but not required when presenting their artwork. After 17 sessions of intervention, the social behaviors of the two participants improved and teachers reported that presentation skills were generalized to the school setting. More specifically, both participants increased spontaneous verbal interactions. One participant also decreased out-of-seat behavior, although this was not the aim of the study.

D'Amico and Lalonda (2017) also saw an increase in social engagement and a decrease in unwanted behaviors through therapist-led art activities. Six students engaged in 75-minute group art therapy sessions, one day a week for 21 weeks. During the sessions, the participants were given various two- and three-dimensional art materials during the interventions that focused on self-expression, creativity, play, social skills, and collaboration. For example, one group art project was to create collages representing different emotions. Pre- and post-test measures were collected using the Parent and Student Forms of the Social Skills Improvement System – Rating Scales (SSIS-RS; Gresham & Elliot, 2008). The SSIS-RS is a standardized norm-referenced assessment analyzing a child's social skills and problem behaviors compared to typically developing peers. SSIS-RS contains subscales measuring communication, engagement, bullying, and autism spectrum. Although most of the measures were insignificant, the mean scores on the hyperactivity/inattention subscale for both parents and students were significant; $p < .05$ and $p < .01$, respectively. The researchers determined that group art therapy as an intervention for children with ASD can help decrease hyperactivity and inattentive behaviors. Furthermore, while other social skills were not shown to be statistically significant, there was a noticeable improvement with communication and cooperation amongst the participants.

Emery (2004) and Horovitz (1981) described the use of therapist responses to participant artwork to elicit further engagement in the work or to reach a therapeutic end. Emery (2004) illustrates this through the process of narrating the drawings of the participant in action and subsequent questioning about the produced work. For example, the therapist commented on the participant's drawing of a restaurant leading the participant to draw a car. The therapist's response to the car elicited a positive response from the participant and, later, the sharing of artwork indicated development in social skills. Horovitz (1981) also initiated a therapeutic response to the participant's artwork and behavior during the art therapy sessions. When the participant demonstrated distress, the therapist utilized these opportunities to develop the student's social and emotional skills using artwork as a means through which to express difficult emotions.

In two comparative studies by McCarthy et al. (2018) and Wright et al. (2019), they asked thirty-one children, with and without ASD to draw the meaning of 10 basic concepts, then explain their drawings to the experimenter. This therapist-initiated approach was aimed towards increasing their language abilities and to compare their use of language, concept development, identification and recall skills. They learned that there were little differences in children with and without ASD, differences typically correlated with their age more so than their abilities and/or disabilities.

Combined Approaches

The child-centered and therapist-initiated approaches are not exclusive of each other and may be used simultaneously. For example, Bentivegna et al. (1983), Malhotra (2019), Schweizer et al. (2020), and Emery (2004) utilized a combination of child-centered and therapist-initiated approaches. In each study the researchers allowed their participants to choose their own materials, a strategy used within the child-centered approach. Bentivegna et al. also used the therapist-initiated approach by prompting and encouraging the participant to draw his wants and fears, thus using art therapy as a communicative tool. Malhotra (2019) made samples of puppets for her client to work from and prompted the use of each puppet to help display certain emotions. Although the participant made her own puppets, she was able to pick from any of the puppets her or her therapist made to discuss the following feelings in structured, therapist-initiated sessions: sad/loneliness/grief, happy/calm/excited, and anxious/nervous/worried. The participant's emotions were rated using two quantitative measures, the Face Stimulus Assessment (FSA; Betts, 2013) and the Interpersonal Reactivity Index, (IRI, Davis, 1983). The FSA is an art therapy assessment for individuals with communication challenges. The assessment measures an individual's memory and visual retention by presenting a series of three pictures; one of a complete face, another or an outline, and a blank image. The IRI is a self-report measure used with ASD individuals and includes 28 items on a 5-point Likert scale with four subscales—perspective taking, fantasy, empathic concern, and personal distress. Results of the FSA did not demonstrate a significant difference. However, pre- and post-IRI data showed that the participant improved in the area of empathetic concern.

Schweizer et al. (2020), used the 'Images of Self' program across 15 therapist-initiated sessions with 12 participants. The Images of Self program consists of 15 sessions where the first three sessions focus on acclimating the child to the art studio, allowing them to determine their art preferences, and learning their resistances. The following 12 sessions the child is encouraged to differentiate their experiences and develop their skills by connecting success and challenges to

words. The therapist records the sessions and later reviews the videos with the parents. The art program is individualized according to the preferences of the participants in themes, type of art materials, skills, and techniques. The art therapist actively ensures that the needs of the children were supported, and challenging behaviors were addressed throughout each session. In the Schweizer et al. study, a pre- and post-test design was used to evaluate the effectiveness of the art therapy 'Images of Self' program. Parents, the art therapist, teachers and the children completed questionnaires (Behavior Rating Inventory of Executive Functioning, Gioia, et al., 2000; Children's Social Behavior Questionnaire, Hartman, et al., 2007; and Self-Perception Profile for Children, Harter, 2012) before the art therapy began and after it concluded. The results of the study showed that seven children improved their flexibility and social behaviors. All the participants were reportedly happier and more stable after the 'Images of Self' treatment program.

Social and Emotional Outcomes

Considering that individuals with ASD experience challenges in social and emotional functioning (American Psychiatric Association, 2013), each of the participants in the selected studies exhibited a need for growth in one or more areas of this domain. Given the breadth of the autism spectrum, individuals with this diagnosis vary in the severity of their social and emotional challenges (e.g., aggression, agitation, engagement, eye contact, self-regulation). Therefore, the specific goals for each participant varied by study.

Bentivegna et al. (1983) documented that their participant engaged in aggressive behavior. During the two years that the participant received art therapy, a decrease in aggression and an increase in eye contact were observed as indicated by the therapist. Bragge and Fenner (2009) video-recorded two participants over a period of six sessions. Participants displayed a need for development in social skills. The therapist used paint and markers during therapy sessions. The researchers noted that because of art therapy, the interpersonal skills of the participants improved, as they both demonstrated an increase in social initiations. For example, one participant shared his past experiences and revealed secrets to the therapist.

Durrani (2014) noted deficits in attachment and social functioning exhibited by their participant. After a year of 30-60 minute art therapy sessions using paint, the participant exhibited an increase in engagement, self-regulation, and the ability to become attached to others, in this case his therapist. Emery (2004), Parvathi (2020), and Rozelle (1982) observed that their participants demonstrated a lack of object constancy, a prerequisite skill for forming attachments (Dosman & Andrews, 2012). After a period of seven- (Emery, 2004), nine- (Rozelle, 1982) and 10-months (Parvathi, 2020) of art therapy using markers, play dough or clay, crayons, theater, and oil pastels, the participants exhibited growth in object permanency and consistency, forming attachments and relationships, language development, and social skills as reported through therapist observational notes.

Horovitz (1981) identified a need for emotional regulation and self-help skills in their participant. After 16 months of 60-minute weekly art therapy sessions using crayons, paint, and clay, Horovitz noted an increase in the ego functioning (i.e., self-image and self-regulation) of the participant, measured by observations recorded in session notes. Elkis-Abuhoff (2008) found that prior to receiving art therapy, their participant had anxiety and exhibited behaviors

stereotypical of individuals with ASD (e.g., lack of eye contact, repetitive hand movements, sucking on clothing), therefore needing to develop social skills. After seven months of art therapy with multiple mediums, Elkis-Abuhoff observed that the participant had demonstrated growth in social skills by communicating more with those around her, and self-efficacy by discussing plans for the future including post-secondary schooling, the process of applying to institutes of higher education, which ultimately resulted in acceptance to an advanced degree program.

Both Kornreich and Schimmel (1991) and Scanlon (1993) indicated a need for social growth among their participants, thus had them engage in art therapy for 24 months and eight months, respectively. After art therapy sessions, the participants increased eye contact and interest in others (Kornreich & Schimmel, 1991) along with increased social initiation (Scanlon, 1993). In addition, the researchers noted decreased agitation, anxiety, and stereotypical movements (Kornreich & Schimmel, 1991) as well as perseverative behaviors (Scanlon, 1993). In all the studies, the therapists qualitatively measured these behaviors by analyzing session notes that reflected upon the participants' behaviors over the span of the therapy sessions.

As previously noted, D'Amico and Lalonde (2017) also saw an increase in social engagement and a decrease in unwanted behaviors through therapist-led art activities. Prior to the intervention the children had difficulty with tantrums, fidgeting, and focus. After the intervention, parents reported a significant decrease in hyperactivity and inattention in their child. Participant's mean scores on the SSIS–RS hyperactivity/inattention subscale were significant; $p < .05$. The opportunities to express their feelings through art gave the participants a chance to reflect on their emotions and express them through art, consequently helping to reduce some of the previous challenging behaviors.

Koo and Thomas (2019) observed the social and communication skills of participants in India were enhanced following art therapy sessions. The researchers used the Childhood Autism Rating Scale (CARS; Schopler et. al., 1988) to assess the characteristics of their 12 participants with ASD. CARS is a scale for rating observations of behaviors in children with autism. The scale contains 15 criteria such as emotional response, body, object use, nonverbal and verbal communication, taste-smell-touch response and use. Koo and Thomas described art as a bridge between the child and the world around them, assisting children with ASD to be more mindful of themselves and their environment. The researchers interpreted enhanced social and communication skills through the artistic creations and their perspective of the world. The participants were given flexibility to choose the art medium and level of participation in the therapy session. By doing so, the participants were uninhibited and able to express their feelings and thoughts. Of the 12 participants in a study by Schweizer et al. (2020), the researchers noted that four participants improved their ability to be flexible, two participants were less overly sensitive, eight participants increased emotional regulation, and all but one participant increased social behaviors and self-esteem after the 15 weekly, 45-minute sessions of art therapy.

Language and Communication Outcomes

Communication challenges are also characteristic of persons identified with ASD (American Psychiatric Association, 2013). Accordingly, each of the participants in the nineteen selected studies demonstrated a marked need for improvement in this domain, although communication

skills were not the focus of every art therapy study. Bentivegna et al. (1983) describe their participant as having a speech disorder. An increase in spontaneous speech was observed throughout the course of the study. Bragge and Fenner (2009), Chou et al. (2016), Elkis-Abuhoff (2008), Parvathi (2020), and Scanlon (1993) also noted increases in nonverbal and verbal communication skills throughout the art therapy treatments. The participant observed in the case study by Horovitz (1981) demonstrated a need for speech development, which improved over the course of therapy as evidenced by an increase in verbalizations. The participant in Emery's case study (2004) exhibited a need for development in language skills, which after art therapy was noted by improvement in receptive language skills. The participant in the study by Kornreich and Schimmel (1991) exhibited incomprehensible speech at times, yet improved in clarity after two years of therapy. The participant discussed by Durrani (2014) required speech therapy services prior to the case study; although this domain was not explicitly addressed in the art therapy sessions, both the art therapist and the speech therapist of the participant noted an improvement in communication skills and speech. D'Amico and Lalonde (2017) reported that the art therapists observed participants as more assertive in their communication with others, which led to an improvement in communication skills, such as turn-taking and active listening. Malhotra (2019) used puppet therapy with a 16-year-old girl with ASD to increase her ability to have interpersonal interactions, intrapersonal processes, awareness of the emotions of others, and externalization of emotions. These skills assisted the participant in processing situations and scenarios, which in turn led to her learning how to cope with difficult emotions. In all of the studies, the generalization of these skills may eventually lead to the participants more actively seeking assistance and beginning conversations with their peers.

Finally, in the comparative studies performed by McCarthy et al. (2018) and Wright et al. (2019), they performed multiple art tasks with children who did and did not have an ASD diagnosis between ages four and 12 to see differences amongst the two groups of children. Some differences and similarities were noted amongst color choice, time it took to complete the drawings, the answers to questions asked by the therapist to explain their drawings, their mean length utterances in responses, and other language elements. The results of this therapeutic process demonstrated that overall differences in children with and without ASD were low, although the ASD participants did struggle with communication and self-identification more than their peers without ASD. Whereas better identification and recall depended on the participants age, not whether or not a disability was present. The researchers also found little differences between children with and without autism in their use of internal state terms, pronouns, or their use of on- and off-task language during the drawing tasks.

Table 2
Participant Outcomes

Social-Emotional Outcomes	
Decreased agitation/aggression	Bentivegna et al (1983) Schweizer, Knorth, Yperen, & Spreen (2020)
Decreased agitation, aggression, anxiety	Kornreich & Schimmel (1991)

Attachment/object constancy	Durrani (2014) Emery (2004) McCarthy, Benigno, Broach, Boster, and Wright (2018) Parvathi (2020) Rozelle (1982)
Engagement	Durrani (2014)
Eye contact	Bentivegna et al (1983) Chou, Lee, & Feng (2016) Kornreich & Schimmel (1991)
Decreased perseverative behavior	Kornreich & Schimmel (1991) Scanlon (1993)
Self-regulation/self-perception/self-efficacy	Durrani (2014) Elkis-Abuhoff (2008) Horovitz (1981) Jalambadani (2020) Malhotra (2019) McCarthy, Benigno, Broach, Boster, and Wright (2018) Parvathi (2020) Schweizer, Knorth, Yperen, & Spreen (2020)
Social skills, general	Bragge & Fenner (2009) D'Amico & Lalonde (2017) Elkis-Abuhoff (2008) Emery (2004) Jalambadani (2020) Koo & Thomas (2019) Kornreich & Schimmel (1991) Malhotra (2019) Richard, More, & Joy (2015) Scanlon (1993) Schweizer, Knorth, Yperen, & Spreen (2020)
Language-Communication Outcomes	

Expressive language	Bentivegna et al. (1983) Bragge & Fenner (2009) Chou, Lee, & Feng (2016) D'Amico & Lalonde (2017) Durrani (2014) Elkis-Abuhoff (2008) Horovitz (1981) Koo & Thomas (2019) Kornreich & Schimmel (1991) McCarthy, Benigno, Broach, Boster, and Wright (2018) Wright, Benigno, Boster, McCarthy, Coologhan (2019) Parvathi (2020) Scanlon (1993)
Receptive language	Emery (2004)

Discussion

The authors conducted a systematic and comprehensive literature review to ascertain the number of peer-reviewed studies with a focus on art as a therapeutic intervention with children identified with ASD (Research Question 1), the overall strategies used in the art therapy sessions with this population (Research Question 2), and the most common goals and effective outcomes (Research Question 3). Although the initial search resulted in over a thousand articles using keywords such as autism and art, only nineteen studies met the inclusion criteria. Of the nineteen case studies identified, researchers commonly utilized child-centered and therapist-initiated strategies. The implementation of these strategies yielded promising goals and outcomes, although most studies were not quantitative by design. Five of the nineteen studies produced quantifiable data with positive results that supported art therapy as a viable tool to increase the social and communication skills of individuals with ASD. Although the outcomes mentioned in these 19 studies are promising, more research is needed before art therapy can be considered an evidence-based practice for individuals with ASD. In addition, given the paucity of quantitative data to complement the existing qualitative data, the field must be cautious when drawing conclusions about the efficacy of art therapy as a suitable intervention.

Implications for Researchers

Implications for future research are indicative of the limitations of the studies reviewed. Limitations include duration of the intervention, data collection and analysis, the research design, sample diversity, and dearth of publications. The duration of the interventions of most of the studies reviewed ranged from days (Chou et al., 2016; Jalambadani, 2020; McCarthy et al., 2018; Richard, et al., 2016; Wright et al., 2019), to months (D'Amico & Lalonde, 2017; Elkins-Abuhoff, 2008; Emery, 2004; Koo & Thomas, 2019; Malhotra, 2019; Parvathi, 2020; Scanlon, 1993; Schweizer, 2020), to years (Bentivegna et al., 1983; Durrani, 2014; Horovitz, 1981; Kornreich & Schimmel, 1991). Given the lengthy duration of many of the interventions, it is

possible that improvement seen in participants could be attributed to other variables such as maturation and other unreported therapeutic interventions (e.g., other therapies, behavioral plans). In future studies, researchers should consider interventions that have a balance between too short and too long in order to reduce confounding treatment effects.

First, researchers must use independent coders to assure the data is valid and reliable. To date, no independent coders or inter-raters were reported in most of the studies, thus the data may be subject to researcher bias. Secondly, few researchers reported quantitative data of the behaviors being measured (Chou et al., 2016; D'Amico & Lalonde, 2017; Koo & Thomas, 2019; Malhotra, 2019; Richard et. al., 2015; Schweizer et. al., 2020).

Future studies evaluating art therapy as an intervention for students with ASD should consider different research designs such as Single Case Design (SCD), mixed-methods, randomized control trial, and data collection and analysis methods (i.e. frequency and duration counts, interval/time-series analysis, behavioral coding via video and real-time observation counts). SCD includes several different experimental designs that does not require large numbers of participants and can be implemented by teachers, art therapists, and other service providers (Horner et al., 2005). In addition, mixed-methods research can provide the field with detailed information of both qualitative as well as quantitative findings.

Researchers should attempt to employ art therapy as an intervention to a diverse pool of participants. In the nineteen studies reviewed, the authors did not include the socioeconomic status of their participants. However, the participant in the study by Durrani (2014) lived in a household where a nanny was employed for childcare purposes. The services provided to the participants in Horovitz's (1981) studies were administered in a foster care agency. Given these special circumstances, it is possible that the participants had low socioeconomic backgrounds, but this information is not explicitly stated. Ensuring that the sample is representative of the larger population of students with ASD can be a challenge given the incidence rate of the disability; however, factors such as socioeconomic status should be taken into account. Given the lack of funding to support art therapy services, future studies should account for socioeconomic status in the sampling process, to afford this intervention to a diverse pool of participants.

Although art therapy has been in existence as a therapeutic intervention since the 1940s (Dunn-Snow & D'Amelio, 2000; Durrani, 2014), there is a dearth of research implementing art therapy with students with ASD. The nineteen studies addressed in this review occurred over a span of 30 years with significant gaps between studies. Fourteen of the nineteen studies occurred within the past twenty years. Given the wide spectrum of ASD and the varied manifestations of the disability, researchers can conclude that this small body of research is not representative of the population of students with autism, thus making it difficult to generalize the findings.

Implications for Educators

Although art therapy is its own practice, separate from that of education, some of the strategies used within the studies reviewed may be transferred or modified to serve students with ASD in the school setting. For example, students could be given the opportunity to use art to communicate (Bentivegna et al.,1983; Bragge & Fenner, 2009; D'Amico & Lalonde (2017; Koo & Thomas, 2019; Kornreich & Schimmel, 1991; Parvathi, 2020; Scanlon (1993). Mirroring, a

technique used by three of the therapists (Durrani, 2014; Rozelle, 1982; Scanlon, 1993), may help teachers connect with their students who have ASD. Educators should be aware that art therapy could potentially be an intervention for students with ASD who do not respond to other interventions. In addition, collaborating and communicating with art therapists who work with their students in a clinical setting is essential to meeting the needs of students on a holistic level and is considered best practice (Dunn-Snow & D'Amelio, 2000).

Conclusion

Art therapy, a practice that has been in existence for over 50 years, may be of great benefit to students with ASD. This comprehensive literature review revealed a variety of strategies that resulted in positive outcomes. In addition, Table 2 provides an overview of "language-communication" and "social-emotional" outcomes for each study, thus demonstrating the multiple benefits of art therapy. The mechanisms of art therapy (i.e., non-intrusive intervention strategy, child-centered, multitude of art mediums for the participant to choose from) reinforce the many positive behavioral changes people with ASD experience as a result of art therapy. Future researchers and practitioners are encouraged to replicate these strategies in studies that employ evidence-based research designs and systematic data analysis. Perhaps if the results of future studies are similar to those analyzed here, more funding options may become available to families of students with ASD who are interested in using art therapy as an intervention to increase social and communicative skills.

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About the Authors

Caroline Guardino, Ph.D. is a Professor of Exceptional Student and Deaf Education at the University of North Florida. Her research interests involve technology and deafness as well as inclusive learning environments for students with disabilities. She enjoys research and teaching

in both disciplines, Exceptional Student and Deaf Education, as this combined knowledge provides a platform for her passion to provide professionals with better strategies and resources when working with students who are Deaf with Disabilities and/or Deaf Multilingual Learners.

Rebekah Wallis, M.Ed. is the supervisor of student information and instruction with the department of Exceptional Education and Student Services at Duval County Public Schools, and adjunct faculty at the University of North Florida (UNF). She earned both her B.A.E. and M.Ed. in Special Education from the UNF and began her career as a varying exceptionalities teacher. In addition to her teaching experience, she serves as the secretary for the Exceptional Student Education Advisory Committee, an organization that facilitates collaboration between the school district, families, and the surrounding community and is an active member of the Council for Exceptional Children.

Arien Peppers Harrison, M.Ed. received a Master's degree in Special Education with a concentration in Disability Services from the University of North Florida. After graduation she began work in the Field of Assistive Technology before pursuing a career in Applied Behavior Analysis. Currently, she is studying to become a Board Certified Behavior Analyst while working as a Behavior Specialist in a Florida school district. Arien also works as an adjunct professor for the University of North Florida where she helps prepare students to become disability service providers.

Morgan Green, M.Ed. holds a Master's degree in Special Education with a concentration in Applied Behavioral Analysis and a Bachelors in Deaf Education with a minor in American Sign Language. She has a wide variety of experience working with students with sensory differences and needs. She is working towards becoming a Board Certified Behavioral Analyst, and researching how different styles of art can positively affect her clientele and their individual needs.

Teacher Perceptions Regarding the Effects of Online Learning During the Pandemic *with Regards to the Progression or Regression of Students' Reading Levels*

Rachel Palumbo, MPS
Mount Vernon City School District

Abstract

Education, alongside the method by which instruction has been proposed, continues to shift, changing how educators instruct, schools operate, and, therefore, the success and growth by which students can progress due to the global pandemic. The ever-changing dynamic of the current state of education places constant strain on pedagogues to continuously adapt to suit both online and in-person platforms, coveting invaluable time that would otherwise be put towards instruction, deeming a halt to academic growth in the face of uncertainty. Various forms of technological challenges, unpreparedness, and lack of resources have stipulated a possible decline across academic subjects, specifically within the realm of literacy. Through the utilization of survey instruments to gauge teacher perception, data will be collected to analyze the effect of remote instruction on literacy progression. The rapid review presented delivers evidence suggesting a consensus with regard to literary decline following the pandemic year.

Teacher Perceptions Regarding the Effects of Online Learning During the Pandemic with Regards to the Progression or Regression of Students' Reading Levels

The impact of Covid-19 has thus far proven to be inexorable, with effects both devastating and overwhelming the education system. Education and schooling as we know it has undoubtedly shifted since the start of the pandemic, changing how educators instruct, schools operate, and, therefore, the success and growth by which students can progress. Along with the widespread closures that the vast majority of the world saw as precautionary measures dating back to the height of the pandemic, schools quickly recognized the difficulty in shifting to a remote or online learning approach to curriculum. Administrators, educators, parents, and even students acknowledged the lack of structure within the education system for such circumstances.

Regrettably, even though educators began to adapt their instruction, becoming more adept at teaching students remotely, invaluable time for learning and growth had been lost, along with the lack of instruction regarding certain concepts and subjects, resulting in a series of unmet standards and regression on behalf of the students to no fault of their own. Specifically under the microscope are how students have maintained respect for reading instruction. Reading is the foundational base of all learning. Without proper reading and phonics instruction, an individual cannot progress within other academic areas. Taking this concern into consideration, a study is warranted to analyze the effects of online learning due to the pandemic, if any, with regards to the progression or regression of students, specifically within the area of reading levels, utilizing teachers' perceptions.

In an attempt to research and analyze data in the specific realm of elementary literacy, reviewing the effects of remote learning on performance and reading level growth, *Fountas and Pinnell* reading levels, or literacy assessment district equivalent will also be investigated concerning the success rate on behalf of teacher perceptions as to whether benchmarks were met and in what

capacity. *Fountas and Pinnell Literacy For All Students Grades K-6* (2021), is a comprehensive, systematically designed reading instructional program that is transformative both professionally and academically and evaluates and analyzes the reading capabilities of students both independently and instructionally, providing reliable data as to their reading levels. This program provides relevant evidence for the sake of this research as beginning and end of year benchmarks provide conclusions as to how a child progressed throughout literacy-based remote instruction. It is important to note that when administered, *Fountas and Pinnell* scores are collected, both at the beginning of the year and the end. By doing so, educators know what they are currently working with in terms of reading levels, how their capabilities have changed over the summer, and how they should tailor their literacy instruction going forward. These two scores will show what the progression in a given year should look like, where they started and how far they came, providing an organic trajectory as to how their progress during the pandemic *should* have looked. Because teachers from diverse districts may be participating in the survey, other possible literacy programs are *Developmental Reading Assessment,* also known as *DRY* as well as *A-Z Running Records.*

Aside from the collection of reading level data, anonymous surveys were conducted among elementary school teachers through an online platform for a perspective on how online learning has shifted their literacy curriculum, also influencing the progress and success on behalf of the students. These online survey submissions asked for anonymous and voluntary participation from educators located throughout Westchester elementary schools in grades kindergarten through fifth grade. This survey aimed to reach a diverse demographic, in hopes of reaching a wider audience and more diverse sample size. The survey's anonymity will ensure the most accurate and authentic responses to contribute to data collection and also as a means of safeguarding data to ensure that confidential and personal and/or sensitive information is protected and non-traceable. Tentatively, the surveys were sent and were applicable for submission for approximately ten days. Statistically speaking, this is the timeframe in which a voluntary participant would have responded if they had intentions to do so.

Ultimately, the rationale for the data analysis provided both perceptions, as well as concrete data, as to the more typical progression of students' reading levels over time in comparison to their progression, or lack thereof, given the circumstances of online learning since the pandemic. This collection of teacher perspectives provided a more tangible idea as to the effects that online learning has had on students regarding their growth and progression within the field of literature as well as a general sense as to whether students were successful in continuing to meet their end-of-year benchmark assessments, individually, and as a whole.

In an attempt to both acknowledge and apply past research regarding academic progression in students following the shift to online learning, as well as to gain a meaningful understanding going forward as to whether a regression has occurred or not, past literature must be considered.

Review of Literature

Given that the suspension of face-to-face instruction within schools was a pervasive decision in schools all over the world due to the global pandemic, the transition to remote or online learning had to happen quite swiftly. While the motive behind teaching through technological means was

enacted with students' best academic intentions in mind, transitioning in-person instruction to streaming platforms offered challenges, such as an increase in screen time, lack of social engagement, lack of focus/engagement/interest with online learning, and technology-related issues (Jones, 2021). These issues, considered alongside the diverse research post-pandemic, allude to the true prompting of regression students may have suffered from the lack of in-person learning.

Technological Challenges

Before delving into the research regarding both the effects of, as well as the success rate concerning online instruction, the distinction between the two designated types of online learning must be clarified. There are essentially two types of instruction that are carried out when using online learning, low-end learning, and high-end learning (Openo, 2020). Low-end online learning is defined as the transmission of content and transference of knowledge (Openo, 2020). When examining a thorough and enriching education, however, learning doesn't derive from simply having a teacher tell you about specific content. For a student to truly grasp and comprehend a subject or concept, they must endure an authentic and genuine learning experience through practice, active participation, and engagement. For a student to sit on one end of a computer screen and “learn” through virtual lecture is an explicit example of low-end online learning, as it is also a surmisable disservice to a student's entitled education.

This idea of failure to properly educate through low-end online learning also expresses itself by means of over assigning worksheets, assignments, and projects as a means to teach. In a study conducted just after the peak of the pandemic, data conveyed that there was an overall general increase in the number of assignments that students were expected to complete in addition to virtual sessions (Motz et al., 2021). Under more typical circumstances, when students invest more effort and time in their assigned coursework, they would show growth in academic achievement. In the case of remote learning, however, due to the over assigning of work in a low-end online setting, students felt overwhelmed and reported that they felt less successful even amidst the time put into their coursework and that they earned lower grades than expected (Motz et al., 2021). Educators struggled to properly adapt their in-person curriculum to fit the mold of an online platform and instead modified their courses to include online "busywork" that did not constitute meaningful learning activities, which had a detrimental effect on student outcomes at scale (Motz et al., 2021).

Contrary to low-end learning is high-end learning. While still virtual in nature, high-end online learning elevates the online face-to-screen instruction through active engagement, utilizing materials developed beforehand, to support students (Openo, 2020). Considering the latter, despite the tremendous efforts put forward by faculty to keep teaching throughout the pandemic, striving to keep the curriculum as regulated and "normal" as possible, the transition to online education was so swift, restricting most educators a timeframe to properly develop a virtual adaptation to said curriculum, resulting in low-end virtual instruction (Openo, 2020). To clarify, because the school-wide shutdowns were so rapid, teachers had little to no time to develop and evolve their curriculum to fit the needs of the online world, to transfer an entire year to fit a technological platform. Without manipulatives, support, modifications, workbooks, and a variety of other classroom-ready materials, students were failing to receive introductions to concepts as they would have in a typical year, ensuring less of an understanding and, therefore, less academic

progress and achievement. Technological difficulties were predominantly seen in a qualitative study that took place in Indonesia, deeming that the success of online distance learning relied heavily on pedagogues' abilities to foster a culture that utilizes information through communication technology in the learning process (Mansur et al., 2021). Teachers' perceptions through the utilization of surveys, conducted alongside interviews, indicated that without adequate technological knowledge, educators were unable to design or implement distance learning thoroughly. Specifically, the material presented often did not target its initial intention as educators struggled to convey the same material on an online platform, which also caused the need for leeway on behalf of educators when collecting for submission (Mansur et al., 2021). While this was a qualitative study formulated based on opinion rather than statistical data, these authentic challenges were ones faced during the height of remote instruction that ensued as a result of the pandemic and are contributing factors to overall academic progress. Teachers admit to an absence of a proper curriculum due to the technological barriers and lack of human resources which alludes to improbable academic growth (Mansur et al., 2021).

Academic Regression

Technology aside, projections of prior research suggest that the effects of the global pandemic *will* have a significant negative impact on academic gains (Kuhfeld et al., 2020). While this study is based on projection, it is assumed based on sound data that students will have begun the 2021 school year with an average of 66 percent of the learning progress in reading as compared with the previous year and 44 percent of academic progress within the subject of math compared to the previous year (Kuhfeld et al., 2020). In a more recent investigation, Kuhfeld (2021) found that new statistics imply that those emerging from the third grade showed an even further decline in performance within mathematics with a decrease by about 9 percentile positions (Kuhfeld et al., 2021).

This study, (Kuhfeld et al., 2021), analyzed a sample of five million students within grades three through eight, utilizing their MAP growth test scores to assess their reading and math growth from the previous year (Kuhfeld et al., 2020). These scores were then juxtaposed alongside the projections of a student in a typical year. Conclusively, data informs that, on average, there will be substantial drops in both reading and math, indicating approximately a three-month loss of academic growth (Kuhfeld et al., 2020). This study in particular provides a strong and cohesive future direction for where new research can go. Future studies can look to either claim or deny the projections proposed by this study.

In fact, in a recent study conducted by Bao et. al, (2020), literacy loss was analyzed directly following the immediate school closures due to the pandemic. Using a multivariate linear regression model, the rate of literacy change presented after summer recess was applied to the pandemic school closures (Bao et al., 2020). Projections indicate that without formal face-to-face instruction, Kindergarten students will lose approximately 67% of their literacy abilities (Bao et al., 2020). Aside from the 67% loss in literacy capabilities, it is also projected that there will be a regression in literacy gains (Bao et al., 2020). Past data implied a 7.23 point increase per 100 days in literacy understanding, whereas now, given the closures, a 2.41 point increase per 100 days is anticipated, implying that not only are students behind within the subject of literacy, but they are also comprehending at slower rates due to a lack of foundational skills (Bao et al., 2020).

Effects of Remote Instruction on Literacy Progression

While the lack of literacy enrichment due to the pandemic is a looming topic for all grade levels, of the utmost concern, are incoming kindergarten and first-grade students. For these students, these years are crucial to both their social and academic growth. For students who spend the majority or the entirety of their first year in a remote format of schooling, they are losing the opportunities to interact and gain invaluable social skills alongside their peers, as well as the direct face-to-face academic instruction as provided by their teachers in all subject areas. Particularly worrisome are their limited literacy opportunities. Without proper and adequate teaching of phonics and the alphabet, students may find themselves significantly behind in the areas of reading and writing compared to their peers from previous kindergarten years. Falling behind has encouraged New York City, for example, to screen nearly 200,000 students in these early grades to uncover struggling readers due to the effects of the pandemic (Zimmerman, 2021).

The decision to screen children starting in kindergarten through the second grade took effect this fall, September 2021, as a literacy effort that is part of a $635 million federally funded attempt to get students from these early grades back on track with what is typically expected of students at their age (Zimmerman, 2021). Ultimately, this screening will allow districts on the whole, but more specifically educators, to properly gauge how to get students who are struggling back to an adequate level, in hopes to keep them from falling behind in such crucial academic years and halting any further setbacks (Zimmerman, 2021). However, it should be noted that in a more typical year, with the elimination of a global pandemic, close to half of the third-grade students have already fallen behind in literacy instruction which has been proven by data across state tests (Zimmerman, 2021). Because of this information, it is even more pivotal that young students receive the literacy services they need to ensure they are not falling even further behind by the time they enter the third grade.

It is stated that these screenings will occur at three different points throughout the year for progress monitoring purposes (Zimmerman, 2021). For the students in kindergarten, first and second grade, these screenings will include letter-naming and fluency tasks, analyzing students' abilities to sound out letters, as well as tasks that recognize students' abilities to decode through the use of nonsense words. These tests will provide educators and districts with larger patterns that show weaknesses and areas where attention is required to meet curriculum and requirements (Zimmerman, 2021).

While the screening is an essential first step in recognizing areas where the pandemic may have stunted literacy growth, the next step is getting students back on track. Whereas the services will vary depending on districts, funding and staff, some proposed practices point to pressure regarding small-group instruction, as it allows for more individualized and personalized attention, ensuring each student's needs are specifically met and their challenge areas are being attended to (Zimmerman, 2021). Students who test significantly behind should be receiving more intensive literacy instruction that includes small-group enrichment in groups of three children, as well as follow-up screenings, exceeding three times a year to monitor that they are making progress on all their lost time (Zimmerman, 2021). These students will also receive a phonics-based multi-sensory approach to reading to ensure that they can progress in literacy, as well as writing. This service, Orton-Gillingham, will be taught multiple times a week to encourage

students back on track. Finally, New York City on the whole is planning to increase the number of literacy coaches, providing even Kindergarten and first and second-grade classes with an individual counselor for more closely-monitored enrichment sessions (Zimmerman, 2021).

Speaking more to the state testing data, studies that imply a decrease in both learning progression, as well as standardized testing scores, can also be affirmed by what we already know to be true regarding learning regression during school closures for summer recess. Summer recess, consisting of approximately two full months without schooling, is a nationwide right of practice. While some students are required to enroll in summer enrichment programs or other forms of tutoring or outside instruction, the majority of students utilize the summer break to rest and rejuvenate from the prior ten months spent in school. Since students have a full two months without any academic structure or routine; it is assumed that they would forget some of what they had learned in the year prior. The Northwest Evaluation Association, *NWEA, for example,* administers the Measure of Academic Progress, *MAP,* a test that provides growth data that attempts to document student learning and growth patterns. As of the most recent growth forecasts (2021), it is understood that the average student lost 17-34% of their prior years' academic progress throughout the summer months in the subject areas of both reading and math (Kuhfeld, 2021).

Because much of the research regarding learning loss in all subject areas as a result of the pandemic has yet to surface, we can take what we know regarding summer learning loss and use it to project an idea of pandemic learning loss. Summer learning loss, also known as the summer slide or the summer setback, is essentially the academic regression that occurs as a response to a lack of explicit academic instruction when students leave school in June and don't return until September. This idea of a loss in academic understanding has spanned the course of decades, dating back to as early as 1906, consisting of a meta-analysis collection of 39 studies through the year 1994 that all allude to a decrease of one month's worth of grade loss, on average (Cooper et al., 1996). An early comprehensive review of the literature, summarized by Quinn et al., (2017), shares findings regarding summer loss, that on average, students' achievement scores declined over summer vacation by one month's worth of school-year learning and that these declines were more prominent for math than for reading, but existed overall, nonetheless (Quinn et al., 2017).

Similarly, a study conducted by Johnston et al., (2015), outlines how problematic the summer slide can be within the area of reading. This study assessed students' academic reading achievement before the summer recess in the spring, and then again at the start of the school year in the fall, similarly to the administering of the Fountas and Pinnell reading program (Johnston et al., 2015). An overall significant decline in reading achievement was observed (Johnston et al., 2015). Not only did students show regression in reading achievement, but the time spent by educators reteaching the lost literacy skills depletes instructional time that could have otherwise been devoted to new and additional educational gains (Johnston et al., 2015).

In more recent years, the regression of students' academics during summer recess was taken one step further and used to make projections as to how an increased duration of school closure would affect a student's academic progression (Kuhfeld & Tarasawa, 2020). In this particular study, research was conducted utilizing students' prior RIT scores, also known as the score, that determines a student's instructional level for the MAP test, following a typical average summer

recess trajectory as a means to inform the extended pandemic school closures (Kuhfeld, & Tarasawa, 2020). To clarify, results regarding learning loss over summer break were taken and used to inform an educated assumption as to how the trajectory would continue if the summer break were to continue for a longer period, i.e. the school-wide pandemic closures (Kuhfeld, & Tarasawa, 2020).

In short, this study forecasted that at the end of a typical year, within the subjects of both math and reading, a third-grade student would have an approximate RIT score of 200, regressing to about 195 following the summer break, whereas, following the school shutdowns in the middle of March, a third-grade student tested at about a 195 RIT score, declining to a 190 when schools reopen in September (Kuhfeld, & Tarasawa, 2020). Essentially, this study demonstrates that while students do decline over summer break, the decline has doubled given the extended period of school closure, implying that students are even further behind than what is typically expected of students returning in September from the summer recess (Kuhfeld, & Tarasawa, 2020).

Research, thus far, informs the methodology of this study, implying that students may have suffered from a similar regression such as the *summer slide.* Research also stipulates that there are various interferences regarding online instruction that may have caused a literacy decline such as technological challenges, adaptability, preparedness, or the ability to transmit otherwise in-person resources and curriculum to suit an online format. Prior research has aided in the survey instrument used to obtain teacher perceptions as subsequently explained.

Methodology

Participants

The participants of this study were anonymous volunteers invited to take part in the experiment through an online survey platform. Following the development of a thorough survey instrument, a general social media announcement was made, expressing the elective nature of the study and how all participation would be greatly appreciated and entirely anonymous, as well as the purpose of the study. Participants were instructed that the purpose of the study was to collect data regarding personal opinions on behalf of educators regarding their experience of teaching through the pandemic in a remote setting and, more specifically, their experience teaching literacy through an online platform. Specific demographics such as age, gender, and race were not collected, as they were not pertinent to the study. Teachers were asked, however, to indicate their years of service thus far, suggesting a level of experience, as well as if they had taught their current grade level before, as well as how many times prior to remote learning they had taught the specific grade level and their total years of service. While no teacher or amount of experience could have prepared educators for teaching entirely online during a global crisis, by providing such information, a more justifiable understanding regarding preparedness for adapting to teaching or teaching a certain grade-level curriculum can be interpreted. In other words, if this was a teacher's first year teaching fourth grade, the idea of teaching a new grade-level curriculum would have proven to be significantly more challenging than a veteran teacher who has been teaching fourth grade for ten years.

Instrument / Procedures

Before the administering of the survey, careful consideration went into deriving questions that were relevant to either supporting or proving otherwise the thesis of this research. All items were acquired from past literature, with the exception of the first section inquiring about teacher information. The second section of the survey pertained to the personal pedagogical perceptions toward teaching remotely. To clarify, this section attempted to gauge how teachers personally felt about the switch to online-based instruction. Teachers were asked to share whether they *felt* that their incoming class of the 2021 school year, meaning this year, was behind as a result of the pandemic of online-based instruction. Teachers were also asked to what degree they had felt prepared to teach remotely when they were told of school closures. Teachers were given options such as very *prepared, prepared, slightly unprepared,* or *significantly unprepared.* The degree to which they felt prepared or not would help to provide perception with regards to students' regression or progression within the area of literacy. While it was no fault of the teacher, students were likely to progress further in the case that their teacher felt readily prepared to adapt to a remote form of instruction, as opposed to a teacher who didn't feel prepared at all to teach under such circumstances. Finally, teachers were asked about their experience in successfully conveying in-personal material through an online platform. Circling back to the pertinence of teacher experiences within a certain grade level, if a teacher had taught a level more than once in person, they may have had a better understanding of the material and found themselves more adept at converting it to be taught remotely. Teachers were given five different options on a Likert scale, spanning strongly agreeing with the statement or strongly disagreeing with the statement.

Part three of the survey encompassed the technological challenges that educators faced as a result of teaching remotely. Aside from the more typical technological challenges faced, such as troubles with Wi-Fi and connectivity, teachers were asked about their experience pertaining to keeping students engaged via the computer, both with listening and actively participating. With countless opportunities at students' fingertips when utilizing a computer, it can be difficult to keep them on task and actively involved with a lesson that is taking place over a screen. Contrarily the obstacle that arises from overexposure to the usage of screens. Oftentimes, children are supervised with limits placed on screen time to ensure they aren't overexposed both mentally, as well as physically, as staring at a screen for prolonged periods can cause overexertion. Because learning was taking place over the format of some screen, whether it be a tablet, phone, laptop, or desktop, however, "screen limits" weren't feasible. Students were asked to be as present as possible for remote instruction, even if it meant staring at a technology screen for hours at a time. Not only does this cause visual strain, but it can also cloud judgment and result in students becoming anxious from sitting in one place for too long. Because of this, teachers were asked to elaborate on their experience with students' frustrations or abilities about remaining online for extended time frames. Other technological challenges that were questioned regarded how educators felt their resources and curriculum translated over from an in-person setting to remote instruction.

Within part four of the survey, perceptions were shifted towards regard to academic regression as a result of online learning. This section more generally questioned teachers' perceptions and opinions regarding how they feel their students measured up to past experiences in terms of subject progression. Specifically, teachers were questioned on how they felt their students'

general understanding of mathematical concepts, spelling capabilities, and understanding of reading and literacy compared to previous years. Teachers were given five variants of responses ranging on a Likert scale from strongly agreeing to strongly disagree with whether or not they witnessed a decline in students' performance.

More concretely, in part five of the survey, teachers' perceptions concretely shifted towards the projection of remote learning concerning its effects on literacy understanding. Teachers were asked questions such as whether they were still capable of administering their *Fountas & Pinnell (2021)* benchmark assessments and if their administering of such benchmark assessments had to be altered as a means to suit online instruction. Similarly, educators were asked about their literacy curriculum in general and whether or not it also had to be altered to tailor a more online platform. Specifically, this section's survey items informed how online learning, as a result of the pandemic, may have influenced a regression or successful progression within literacy.

Following the adaptation of the survey, consent was approved on behalf of the school administrator and the survey was sent via email to all grade-level teachers, as well as more specific teachers, such as specials, speech, and occupational therapists. By inviting all staff to participate, larger sample size was expected. The survey was left accessible for eight days and was closed and retracted for data-keeping on the ninth day. Participation in the survey should have taken participants no more than ten minutes max in hopes of obtaining the most accurate voluntary results. The survey was constructed on an online platform known as *Google Forms* allowing for easy participation as teachers can respond to the survey from a link that automatically collects and transmits data. The results of this project were coded in such a way that the respondent's identity will not be attached to the final form of this study. All data was stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matched up individual respondents with their answers was deleted or destroyed.

Findings

Participants

Of the nineteen participants who responded, there was diversity amongst grade levels that were taught remotely through the pandemic. For grades first, second, fourth, and fifth grade, four teachers reported teaching online. Eight teachers reported teaching remotely for third grade, and one teacher taught kindergarten. While some participants indicated one year of experience, others indicated twenty, however, on average, participants indicated approximately six years of teaching experience. In terms of grade-level experience, approximately half of the participants indicated that this had been their second year teaching at the grade level of which they taught during the pandemic, meaning this individual only had one year prior of experience in a more typical setting. Two teachers indicated that they had two years prior experience, three teachers indicated three years of prior experience, one teacher indicated four years of prior experience, and five teachers indicated that they had taught this grade level for five or more years.

Of the questioned subject areas, more than half of the participants indicated teaching core subjects, such as reading and literacy, mathematics, and English language arts through means of online instruction. Specifically, sixteen teachers taught literacy and reading instruction, seventeen taught mathematics, and twelve taught English language arts.

Taking into account teacher perceptions regarding their abilities to adapt to a technological school approach, while more than half of participants, 68.4% of teachers to be exact, indicated varying levels of unpreparedness and only 31.6% of teachers had specified a level of preparedness, raising awareness to the difference in perceived readiness which could potentially affect the progression of students' literacy understandings when considering how it was taught remotely. Furthermore, teacher perceptions were divided almost precisely, with 31.6% indicating that they agreed with, were neutral towards, or disagreed with the ability to successfully convey in-person material through an online platform, again, calling attention to the varying experience with readiness to teach through a remote format.

What is notable is the consensus on behalf of teachers that the incoming class of 2021 appears to be behind as a result of pandemic instruction. An overwhelming 63.2%, more than half of participants, indicated that their students were significantly behind. In contrast, 26.3% of participants, specified that their students were only moderately behind, and 10.5%, suggested that their students were only mildly behind.

Technological Challenges

Table 1.1
Technological Challenges

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4	47.4%	42.1%	10.5%	0%	0%
6	57.9%	21.1%	15.8%	5.3%	0%

When analyzing the perceptions about the technological challenges faced as a result of online instruction, in terms of resources, educators were divided on their access to support. While the majority of teachers, 73.7% specifically, did indicate that they either strongly agreed or generally agreed that their resources and manipulatives were lacking, other individuals specified that they either disagreed or were neutral on the matter, a total of 26.3%. While the predominance of responses was supportive of the notion that resources were lacking, the access to resources and materials, while influential on the productivity, success, and progression of an online curriculum, varies by district, school, lesson, and class, therefore, acting as a possible confound.

Concerning the transition of in-person materials over to an online platform, 73.7% of teachers disagreed, meaning, that fourteen of the nineteen participants felt their typical in-person materials did not transition seamlessly over to an online platform. Such a high percentage of difficulty concerning teacher perceptions regarding the adaptation of in-person materials to an online platform could influence the way by which a literacy curriculum would be taught, creating discrepancies in comprehension and literacy progression.

Of the most divided teacher perceptions regarding technological-based challenges were students' ability to hand in their assignments, projects, or homework as successfully as they would have during in-person instruction. Approximately thirty-seven percent of teachers suggest that their

students hand in assignments half of the time, with 31.6% of teachers indicating their students handed in assignments less than half of the time and 26.3% seldom handing in their assignments.

Academic Regression

Table 1.2
Academic Regression

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13	42.1%	42.1%	15.8%	0%	0%
15	0%	10.5%	21.1%	57.9%	10.5%
20	0%	15.8%	31.6%	42.1%	10.5%

Concerning general academic regression spanning different subject areas, on the whole, 63.2% of teachers felt an agreement that their students were grasping the curriculum at a generally slower pace as compared to previous years. Categorically, approximately half of teachers, 68.4%, agreed that their students' general understanding of mathematical concepts in some capacity regressed as a result of a lack of in-person learning.

In reference to spelling capabilities, 79% of teachers either strongly agreed or were in general agreement that students' general spelling abilities regressed as a result of a lack of in-person learning.

While all of the findings of this survey warrant significant attention, given its relevance concerning the success of academic progression in response to online learning, the most eminent information can be found within the conclusion section of the paper. Such conclusions were derived from the items of the study that shared more than a majority consensus by the participants, revealing strongly shared perceptions.

Conclusions

The rationale behind both this study, as well as the collection and analysis of data, served the purpose of providing teachers' perceptions regarding the effects of online learning due to the pandemic, if any, with regards to the progression or regression of students, specifically within the area of reading levels. Teachers were assessed surrounding various aspects of remote instruction, such as technological challenges, general academic regression, and specifics within the realm of literacy. The most notable findings have been to support the notion that the implementation of online learning affected the way by which students were both physically and mentally capable of accessing literacy materials and curricula, alluding to the likelihood of a literacy regression.

Technology

Regarding notable data on behalf of teachers' perceptions about technological challenges, the majority of teachers, 89.5%, indicated that they either strongly agreed or generally agreed with the notion that it was more challenging to keep students actively listening and participating during remote instruction. Similar to this is the idea that constant technological exposure creates burnout, affecting students' abilities to remain engaged during remote lessons. More conclusively, an overwhelming 79% of teachers either strongly agreed or generally agreed with this statement. Comparable was the general perceived student engagement throughout the course of remote instruction. Sixty-three point two percent of teachers stipulated that their students were somewhat engaged as opposed to preoccupied or disinterested. No teachers indicated, however, that their students were actively engaged. These data are conceptualized within Table 1.1.

The consensus is that educators found it increasingly more difficult in comparison to in-person instruction to keep students on task via the computer even when considering that most students were reported as being "somewhat engaged." This in mind, regardless of the subject, but specifically regarding literacy, students were enduring difficulties in comprehending or grasping topics due to constant technological exposure, as well as the confounds of not being in a classroom setting, but instead in the general comfort of their home, or wherever they were quarantining.

While a vast majority of schools in both the world and in the country have returned to in-person learning in some capacity, some schools are still utilizing remote instruction, whether it be full time or part of the time. Because of this, while a challenge, the way by which students are receiving online schooling should be adapted in a way that allows students frequent "brain breaks," to decompress from overexposure to technology to regain concentration, and focus, and allow for a better opportunity to comprehend new topics.

Literacy Regression

Of all of the data analyzed, the most notable concerns teacher perceptions within the realm of literacy regression which is outlined in Table 1.2. Specifically, 42.1% of teachers strongly agreed, and 42.1% agreed, accumulating to 84.2%, significantly more than the majority of teachers, that students' progression within reading and literacy showed a decline as compared to previous years. Similarly, 88.5% of teacher perceptions disagreed that students were successfully able to progress within reading areas throughout remote instruction to some degree, whether it be a strong or general disagreement. Accordingly, 52.6% of teachers also indicated that they disagreed with the idea that the majority of students showed growth in reading fluency and comprehension capabilities from the fall semester to the spring semester during remote instruction. On the other hand, 31.6% of teachers were neutral, and 15.8% of teachers agreed with the progression and growth. This general regression within literacy may stem from the 73.7% of teachers who stipulated that many changes were required as an alteration for their literacy and reading curriculum to suit an online platform. While nothing is ever certain, data implies that this could be equated to remote instruction when teaching literacy as opposed to an in-person approach.

It is important to note that there is no one-size-fits-all model when approaching how to adapt an in-person literacy curriculum to suit an online format, however, because students are showing an outward regression in terms of their understanding and comprehension of different aspects of the literacy subject area, changes need to be implemented to correct the discrepancies that have occurred. Since students have currently fallen behind as a result of the remote learning due to the pandemic, alternative resources and support should be provided to students who are testing below average as a means and hopes to bring them back up to grade average and levels.

When questioned about literacy benchmark assessments, such as *Fountas & Pinnell* or the district equivalent, 72.2% of teachers indicated that such tests were still administered despite remote instruction and school-wide closures. However, 27.8%, did not carry out such assessments. Correspondingly, while some literacy curriculums had to be altered, for those who did administer literacy assessments, 33.3% of teachers indicated many changes to allow these assessments to suit an online platform, and 50% of teachers indicated slight changes.

The consensus is that the majority of students *did not* meet their end-of-year benchmark levels for literacy benchmark assessments, such as *Fountas & Pinnell* or their district equivalent. Additionally, 84.2% of teachers specified that their end-of-year benchmark achievements were *not* on par as compared to a more typical (non-pandemic) school year.

For students to reach their literacy benchmarks once again, students should receive alternative support in conjunction with their regulated grade-level curriculum. These supports will hopefully allow students to make up for lost instruction while refraining from following behind on their current literacy instruction. Some supports that could be offered to students in hopes of bouncing back from a possible regression are programs such as *Wilson Reading System* or *Fundations.* While both of these programs are more phonics-based approaches, they can aid younger students in foundational grades, such as kindergarten and first grade, to advance in reading through the ability to decode words. Resources for older grades could include interventions such as student-centered reading curriculums, or the possibility of literacy counselors and instructors operating in either a pull-out or push-in method.

Regardless of a pandemic, schools and districts operate in different ways, following different curricula and standards, stipulating that the way by which a school operates remotely will also be diverse in nature. As the data outlines, however, teacher perceptions from various districts still show a consensus identifying some type of literacy regression implying that students are behind in reading and literacy. Not only do teacher perceptions indicate a regression within the subject area of literacy, but general academic decline, on the whole, concerning subjects such as mathematical computation and reasoning, as well as spelling.

Teachers shared various aspects that could have contributed to the academic decline, specifically within literacy, such as technical issues like difficulty with engagement or focus or the inability to transition a successful and enriching literacy curriculum to an online platform. However, further research could be encouraged to more specifically pinpoint not only what is responsible for the regression, but also how prominent the decline is.

To further the research presented in this study, investigators could explore the topic more concretely by means of a case study, an individual student's progress in literacy. For example, by looking back at *a-z records,* or *Fountas and Pinnell* records, more accurate data regarding which students would typically meet their benchmark and then didn't for the first time during the pandemic could be charted. To clarify, more realistic statistics can be collated to identify how frequently students failed to progress during the pandemic and how common it was for them. For some students, the lack of meeting their benchmark may be uncommon and in response to a lack of in-person intervention, whereas for others, the trajectory may be common. Other future investigations may include a review of MAP scores in comparison to previous years to gauge how common the pandemic regression was on the whole and determine whether the academic declines were district-centered or if the majority of students across the country were challenged due to the challenges presented by remote instruction.

Limitations / Directions for Future Research

With regards to limitations, this study was conducted within a short time frame, which limited the time for data collection and thereby negatively impacted the success of the study. Likewise, this study was conducted with exceedingly limited resources, indicating a small sample size, implying that while factual, the data collected cannot be generalized to the larger population of students. For the data to apply to a wider range, a larger study with substantially more participants would need to be conducted to allow for greater generalization across grades and districts. It is also pertinent to note that while the conclusions seem vast, they are the generalizations of a small sample size. Further research could also be conducted surrounding how teachers adapted their instruction to fit the method of online presentation. Due to the pandemic-based restrictions, and lack of time and participation, responses to the adaption of instruction were not collected for this study.

While there is more research to be done concerning the long-term effects of remote instruction on reading progression and success, the immediate findings of this study suggest an overall literary decline following the transition to online instruction. Taking into account the entirety of the surveyed population, eighteen of the nineteen teachers who specified their end-of-year benchmark assessments were not met, also shared that such results are not typical in comparison to a more typical (non-pandemic) school year. Such data ultimately suggests a definitive shift in the way by which students were capable of understanding literacy curriculums through a platform of online instruction.

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About the Author

Rachel Palumbo, MPS, obtained her degree from Manhattanville College. She acquired her general and special education certifications in the areas of birth-sixth grade, which influenced her

her research in such areas. She is a third grade elementary school teacher in the Mount Vernon City School District.

Ready for the World? Increasing Effective Post-secondary Readiness for Students inSpecial Education Based on Educator and Practitioner Points-of-View

DeShanna Reed, Ed. D, BCASE
Dr. Cruz Casiano, Ed.D.

Lone Star College North Harris Campus

Abstract

Increasing the post-secondary readiness of students is a critical focus for districts nationwide. Many schools offer college, career, and military readiness counseling (CCMR) for general education students; however, little attention to no attention is paid to the post-secondary needs of students in special education programming. Federal regulations outline parameters for transitioning students in Special Education programming beyond high school, yet standards for the post-secondary readiness of students with intellectual disabilities are inconsistent from one district to the next. Moreover, deficits in programming can also be linked to a lack of knowledge regarding community-based resources and how best to prepare transitioning students to access them. These interviews explore practitioner experiences with post-secondary readiness for students in special education based on their capacities in education and the urban community of a large city in Texas. Practitioners participated in one-on-one interviews with the researchers. All participants were asked five questions: (1) What do you do currently/what does your organization do? (2) What is your tenure in education? (3) Based on the capacity(es) you have served/are serving, how do you believe educators can better support students in navigating a multilayered system of post-secondary choices and directions (4) What post-secondary skills do you believe are critical for student success? (5) How do you believe education needs to change to prepare young people in special education for their futures? Practitioner responses to the interview questions shed light on deficits and areas of improvement for the post-secondary readiness of students in special education and recommendations for educators and families tobetter support students transitioning to adulthood.

Keywords: post-secondary readiness, transition, special education

Ready for the World? Increasing Effective Post-secondary Readiness for Students in Special Education Based on Educator and Practitioner Points-of-View

Imagine a student approaching the first day of their senior year. They fantasize about preparing for graduation day, donning their cap and gown with a big smile, and the sense of accomplishment that comes as they receive their diploma. Some students enter their senior year with plans for the college or university they will attend, while others focus on more technical training or military service. Now imagine the student with a disability enrolled in special education programming. According to statistics, 7.3 million students qualified for services underthe Individuals with Disabilities Education Act (IDEA) as of the 2019-2020 school year. That equates to 14 percent of all public school students. The most common eligibility category for many students (33%) is specific learning disabilities (NCES, 2021). Students with

intellectual disabilities and special education programs are often overlooked for college and career readiness and are often unaware of their options after graduation. For those with severe developmental and cognitive delays, the primary question is not whether or not the student is prepared for the transition. The question is whether or not their parents are ready.

Background

Several factors influence how students and their families receive the support they need for a successful transition. Many parents are left confused, frustrated, and afraid of navigatingthe IEP process, soliciting assistance through outside agencies, navigating guardianship, and applying for supplemental security benefits (Reiman et al., 2010; Lee & Kim, 2021). As practitionersin special education, specifically in 18+ Transition and community college programs, our roles include guiding students and their families through the transition process to achieving their post-secondary goals. The researchers collectively pondered whether their experiences were unique toour functions and became interested in gaining the perspectives and experiences of other special education practitioners. While collaborating on programming and resources to connect students in transition with options in higher education, the researchers noted the need for significant improvements in post-secondary readiness programs for individuals with intellectual disabilitiesand disorders.

Methods

To obtain these critical perspectives, the researchers conducted structured interviews with select educators and practitioners of special education. Discussions were centralized on five main questions:

1. What do you do? What does your organization do?
2. What is your tenure in education?
3. Based on the capacity(es) you have served/are serving, how do you believe educators can better support students in navigating a multilayered system of post-secondary choices and directions?
4. What post-secondary skills do you believe are critical for student success?
5. How do you believe education needs to change to prepare young people in specialeducation for their futures?

Considering students are our end users and require more than the services provided within K-12 schools, the researchers were also interested in the recommendations of outside agencies regarding the ways educators, practitioners, and parents can improve the post-secondary readiness of students with disabilities. Responses of the selected educators, practitioners, and outside agency representatives and our experiences highlight similarities in experiences and areas of need for students, their parents/guardians, and our fellow practitioners. As educators continue to serve and prepare students for post-secondary life, it is imperative that conversations like these continue, and those on the frontlines of education are considered when developing special education and post-secondary readiness programs.

Interview #1: Brittany A., former PASS teacher; current HCAP teacher

"I am a former Positive Approach to Student Success or PASS teacher. The PASS program is a program for at-risk youth in the special education program to assist students with specific behavioral disorders or disabilities. The researchers work on their ability to be productive and successful in general education and the Resource settings through interventionsand replacement behaviors to avoid disciplinary issues or consequences in or outside the classroom. The most common disorders in the program are emotional disturbances (i.e., ADHDand Autism). Currently, I am an HCAP (High School Children with Autism) teacher. In my unit,the researchers work with too physically aggressive students to function in a Life Skills classroom and need a highly structured classroom setting. I have been in special education for six years total; three years as a paraprofessional and three years as a teacher of record.

Based on the capacities I have served and am currently serving, I believe educators can better support students in navigating post-secondary choices and directions by having realistic expectations for students who are not and cannot be college-bound. Rather than the academic requirements in the form of state educational standards, I think it would be best to provide students with skills of value to them, such as actual Life Skills. For example, it is counterintuitiveto task students with limited cognitive retention abilities to master subjects like geometry and algebra rather than practicing skills in functional math such as personal finance. Guiding students with disabilities to skilled trades within their abilities would be much more beneficial for the students and their families.

I believe education needs to change to prepare young people in special education for their futures by having programming such as Life Skills with its own practical, non-computer-based curriculum written and audited by Life Skills teachers. Much of what is currently available is notappropriate for students as it is either too simplified or too detailed, neither of which is productive for our students. Resource centers featuring Life Skills learning labs should be located in several locations within districts rather than just one to service multiple high school campuses. Also, parents should be given courses in guardianship, obtaining SSI benefits, etc., aspart of the school curriculum rather than the occasional workshop. I don't believe that parents do not want to be involved in the process of purposely waiting until their student is near graduation to act on these things. The real issue is they don't know where to start".

Interview #2: Jarvis H., Transition Specialist

"I am a transition specialist in a large school district who works with students in 9th-12thin the special education program. I focus on developing post-secondary goals with students. I amalso responsible for state audits for compliance with TEA Corrective Action Plan (CAP) for documentation according to the SPPI-13 and SPP 13. I also know that there are not many of me in other districts across the state, which is an issue that needs improving. The essential skill for students to have to be successful, in my opinion, is the ability to advocate for themselves. They have to express what they need and be willing to go after what they want. Being open-minded and willing to try new things is also critical. Finding something of interest that the student truly wants to do rather than what has been imposed on them is significant in my role. Doing this gives the student a voice and choice in what they decide to pursue. That is where being open-minded comes in.

I also feel that early intervention regarding post-secondary options for individuals with special needs is another critical skill that schools and educators need. Starting with middle school grades, the 7th-8th grade is the best time for students to be introduced to career options.Early exposure to the career fields and an actual snapshot of what the career looks like in the real world from a current practitioner (i.e., job shadowing, career days, etc. starting in middle school, etc.). For those with more advanced functional abilities, having companies and representatives with special needs visit campuses will allow students to project themselves into those fields because they have representation by someone with similar disabilities.

I believe schools, specifically educators, can better support students in navigating post-secondary choices and directions by collaboratively presenting options such as apprenticeships, career and technical education (CTE), and internships within their academic content areas. Thiskeeps the students focused on the connections between what they are learning in school and howit applies to life beyond school. I believe education needs to change to provide more real-world immersive life skills lessons through courses about personal finance, credit, and relevant independent living skills (i.e., paying bills, housekeeping, etc.) to prepare young people with special needs for their futures adequately. Also, clear expectations for teachers to deliver instruction, student programming, and guidance to establish realistic and attainable goals for their student's career, college, or home living options are essential starting in their first year. According to their [the student] functional and cognitive abilities, educators and school leaders should have direct, ongoing conversations with parents and students regarding the available post-secondaryoptions.

State and community-based resources are the most overlooked areas for campuses and families regarding post-secondary readiness and transition for individuals with special needs. Parents lack knowledge regarding available community resources such as Medicaid, SSI, and living arrangements, leading to significant difficulty as the student reaches the time of age-out. Another overlooked area is school follow-up. I mean that schools do not follow up with students who have transitioned consistently. The process of student follow-up post-graduation and age out from the special education program is unclear at the campus level. It may be inconsistent statewide as well as nationally. I believe parents should begin obtaining guardianship, establishing powers of attorney, registering for supplemental security benefits, and other essential things starting as soon as their student enters high school. Some of these processes takeyears and can be very expensive. The sooner parents start the process, the better. Middle schoolcampuses should have a transition specialist to guide parents through transitioning from middle to high school and explain more than just a generic overview, expecting that the parents will learn how to navigate the system independently.

In terms of advice or feedback I would like to give regarding post-secondary readiness, families should establish clear goals with their students through communication with the specialeducation teacher. Parents must be transparent with school staff regarding their needs and ask questions early and often. For teachers, collaboration in the special education program at the high school level is essential for student preparation for movement through high school and intothe transition setting. Teachers and leaders should consistently share information with the parents and allow them to determine what they do and do not need rather than only providingthe bare minimum".

Interview #3: Juanita S., Educational Diagnostician

"I am an assessment professional who conducts rights conferences with parents' eligibility for services and those who need updates to eligibility. If there are handicapping illnesses that arise, I can diagnose the educational impacts they may have on the student. I can alsosuggest resources for parents and students related to post-secondary readiness depending on the student's abilities. I work with students and parents to work with outside agencies and conduct vocational assessments to formulate a report and plan for the student based on the assessment outcomes.

I have been in education for 42 years. I had just entered college in 1975, at the time whenthe 94-142 was passed. I remember when all students, regardless of disability, were grouped and isolated from the general population with little to no resources. I was a classroom Life Skills teacher, Resource teacher, and co-teacher for ten years. I also taught ESY at the secondary levelin the summers until I became an administrator. As an administrator, I was an Instructional Coordinator in a medium-sized school district in the Houston area for seven years immediately before becoming an Educational Diagnostician. I have been in this role for 25 years.

I believe educators can better support students in navigating post-secondary by encouraging parents to attend district-offered meetings and sessions regarding specific topics connected to transition, guardianship, powers of attorney, etc. When students see their parents involved, theyknow the connection between school and home and perform better. Encouraging parents to invite outside agencies and seek out the available resources at no cost isbeneficial for the student. Teachers should avail themselves to guide parents through locating outside agencies and resources.

Education needs to change by providing a more structured follow-up procedure post-high school for those not entering a transition program to guide parents and students through meeting their goals and preparing young people in special education for their futures. Furthermore, students in special education in other states currently receive certificates of attendance rather than a diploma. That is not the case in Texas unless the student is enrolled in atransition program. There needs to be unity across states for students who transfer as those are being done a tremendous disservice as they lose credits when they move. There is no consistency from state to state, which creates animosity between parents and campuses. Also, there is a lack of specificity regarding the actual courses the student has taken to determine the student's true abilities and level of knowledge. For example, students transferring from certain states do not have scores for intellectual capacity. They are only classified according to their diagnosis, whichleads to a lack of specificity and inconsistency of education across states. A system needs to be implemented by the federal government. Suggestions need to be provided to give more guidance to the conditions to identify the curriculum and specific plans for IEPs to be implemented by the states.

As far as advice or feedback I would like to give regarding post-secondary readiness, we educators need to ensure our students have realistic goals and objectives. The researchers also need the support of the school leaders and the parents. It takes a village to guide students to thecorrect path according to their actual abilities.

Interview #4: Ana C., MSW, CPP

"I am the Program Director of Transition Services for the Houston Community College VAST Academy. VAST Academy provides post-secondary transition programs and comprehensive support services, which lead to meaningful credentials, employment, and independence for individuals with intellectual and developmental disabilities. Opportunities include vocational, occupational certificates, career readiness credentials, and employment assistance offered through an inclusive, relevant, and affordable avenue. In college, one of the most important skills for student success is the student's ability to self-identify their disabilities and be able to verbalize accommodations they need to be successful. In addition to programs likeVAST, I would like to see more full inclusion opportunities within colleges and universities".

Results

The researchers noted joint statements based on the experiences and responses of the educators and practitioners interviewed. Two interview respondents highlighted the need to build special education faculty and staff capacity at high schools and colleges to support students with their transition. As our education system heals from the damage caused by the pandemic, the researchers have an opportunity to create a system of support services in the transition pipeline. Although not mentioned by the practitioners interviewed, the researchers believe that faculty andstaff need professional development in various college and career programs and special education laws regarding student rights at federally funded post-secondary institutions. Due to the extensive paperwork and admission requirements, students require additional assistance to complete the necessary steps to pursue their post-secondary education. This guidance should come from trained, specialized high school and college staff.

Implications

Practitioners also noted that the limited awareness of opportunities available and limited resources in some communities had created obstacles for students and parents. The researchers suggest creating a state or nationwide transition summer program designed specifically for students with disabilities to bridge the transition gap between middle and high school and from high school to higher education for able students. This is not the same as the extended school year (ESY) available for students who show regression and need continuous enrollment. These programs could be held at local colleges and community colleges as a one to two-week summer camp. Each day covers the necessary knowledge, and skills students need to be successful as they transition to college. Students can also learn about various academic and career, and technical programs offered. Sessions focused on advising, financial aid, counseling, tutoring, career placement, and community services could be part of the transition camp. Additional sessions would also feature speakers from various employers and provide information about what they look for in potential employees and student rights and responsibilities in college. Highschools could collaborate with colleges and community colleges to present opportunities to inform parents about the legal ramifications once students turn eighteen to assist and prepare parents for their student's transitions.

Limitations

Given that the researchers are also current practitioners, one limitation of this study is theaccess to a representative sample. Participants came from the same region, school district, and community college system. Future research should include practitioners from across the state andschool districts of varying sizes. Another limitation of the study is that the students discussed by practitioners are students currently in the transition program. Future research should examine how high school seniors who are not participating in the transition program are prepared for post-secondary life. Moreover, including parents and adult learners in the interviews would provide a more cohesive view of post-secondary readiness experiences and prescribe relevantimprovements.

Conclusion

Students and families face many changes as they embark upon life after high school. As noted by our interview respondents, the key to student post-secondary readiness is involving the student and their parent/guardian early on and often throughout the transition process. Educators' and practitioner guidance and direction is essential for parents to navigate the resources and programs available to students. Above all else, equipping students with realistic options and allowing the student voice and choice in their post-secondary readiness also provides them with the keys to their futures.

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About the Authors

Dr. DeShanna Reed is a former classroom Special Education teacher and campus administrator. She is a TEDx speaker, adjunct professor, and the founder of D. Reed Coaching, Consulting & Advocacy, LLC, an educational consulting, and research firm centralized on increasing accessibility, equity, and inclusive practices for students of all ethnic, linguistic, and neurodiverse abilities in schools. Dr. Reed earned her Board-Certified Advocate for Special Education credential from the National Association of Special Education Teachers in 2021. She is the author of *UDL for SEL: A research-based practical guide for improving planning, instructional, and assessment practices for whole-student and whole-educator success*.

Dr. Cruz Casiano is a former classroom secondary Special Education teacher, Career Technical Education (CTE) teacher, and full-time professor for the VAST program at Houston Community College. She is also the former Executive Director for the MFF Foundation and has served on many Boards of Directors for nonprofit organizations in the Greater Houston area. She is currently the Director of the Career and Applied Technology program for Lone Star College North Harris Campus in Houston, Texas.

To Buy or Not to Buy: Understanding How Special Educators Make Decisions as Consumers of Intervention Materials for Children with Disabilities

Dr. Lesley Sylvan, Ed.D.
Erica Goldstein
Dina Hafez

Montclair State University

Abstract

Speech-language pathologists (SLPs) play a pivotal role in K-12 public schools supporting students with a wide variety of needs. Like other educators, they face a vast array of choices for teaching material ranging from $1 downloadable worksheets to scripted curriculum that cost over $200 from educational publishing companies. The purpose of this study was to examine how SLPs working with school-aged children make decisions when purchasing educational materials. It involved a national survey completed by 115 participants. Understanding how these professionals make decisions in an environment influenced by profit and marketing provides insight into how educators more broadly function as critical consumers. This study found that issues like price, convenience, and time-saving are major drivers of purchasing decisions and that SLPs value flexible products that align with students' goals. This study also found that word-of-mouth recommendations, marketing materials, and conferences were prominent sources of information about educational products.

Keywords: special education, intervention materials, packaged programs

Author Note: Correspondence regarding this article should be addressed to Lesley Sylvan, Montclair State University Department of Communication Sciences and Disorders, 1515 Broad St, Bloomfield, NJ 07003 (Email: sylvanl@montclair.edu). We have no conflicts of interest related to this study to disclose. This research did not receive grant funding.

To Buy or Not to Buy: Understanding How SLPs Working With School-Aged Children Make Decisions as Consumers of Intervention-Related Materials

Like other special educators, speech-language pathologists (SLPs) working with school-aged children use a variety of tools and approaches in their interventions. SLPs may choose to develop their own materials to support their interventions or choose from a wide variety of materials that can be purchased, downloaded, or otherwise procured. There are a number of larger companies that specifically cater to special educational professionals (e.g., Super Duper, LinguiSystems), a variety of products developed by individuals or small groups (e.g., Expanding Expression Tool [EET]), many materials available on online marketplaces (e.g., Teachers Pay Teachers [TPT]), as well as speech-related apps and websites (e.g., SLPNow). In addition to these, there are a variety of more general mobile apps, technology tools, or physical products (e.g., games and puzzles) that SLPs may consider purchasing to support their interventions. Finally, SLPs may consider

purchasing materials or programs designed to be used by a variety of professionals within the broader field of education (e.g., Orton-Gillingham). Given this large variety of choices of intervention materials, it is critical to understand how SLPs make decisions about purchasing programs to support their interventions.

The Challenges Faced by SLPs Acting as Consumers of Tools Related to Treatment

There is a wide variety of educational tools that SLPs may consider implementing with school-aged children with disabilities. When money is involved, SLPs' decision-making not only impacts client care but also represents a financial investment. Most materials, products, and packaged programs are promoted through advertising aimed at influencing the purchasing decisions of SLPs. It is crucial to understand how SLPs interpret marketing claims and integrate their ideas as consumers while maintaining a focus on evidence-based practice (EBP) and client needs. There is ample evidence that companies and product developers use keywords like "research-based" and "brain-based" with the understanding that referencing such concepts will be appealing to consumers of educationally-relevant products (McCabe & Castel, 2008). Within this context, there have been numerous calls to increase the critical consumerism skills of professionals in education generally (e.g., Sylvan & Christodolou, 2010). Within the field of communication sciences and disorders, Finn et al. (2016) argue for the importance of critical thinking when SLPs make sense of treatment claims and highlight the need to identify possible cognitive biases including stereotyping and wishful thinking when reading research-based claims.

Many products geared towards SLPs and other special education professionals are strongly advertised or highlighted at seminars, presentations, and continuing education unit (CEU) events or featured at exhibit halls at conventions and conferences that SLPs often attend to learn more about the latest research in the field. Forehand and Allen (2007) described how "Entering the vendor exhibit hall at a national convention for the first time can be an awe-inspiring event. Row after row of vendors offer free gifts, ranging from inexpensive trinkets to valuable therapy materials and entertainment systems ... The ultimate goal, of course, is to capture an audience of new and returning customers" (p. 3). Although the American Speech-Language-Hearing Association (ASHA) places a strong emphasis on authors and speakers disclosing any conflicts of interest when specific programs or approaches are mentioned (for example, financial and nonfinancial disclosures are required in ASHA's annual convention presentations; ASHA, n.d.-d), it stands to reason that evaluating marketing materials and applying the principles of EBP carefully in a profit-driven environment is a challenge for SLPs. In the face of promotional materials and events, SLPs must exercise caution and be deliberate about evaluating products critically.

Even beyond products that are marketed by companies, educators like SLPs are in the position of evaluating and being critical consumers of all the materials available for purchase on vendor websites such as TPT. A paper from the Fordham Institute titled "The Supplemental-Curriculum Bazaar: Is What's Online Any Good?*"* published in 2019 explored whether or not the supplemental materials that teachers may download and purchase on popular websites (e.g., TPT, ReadWriteThink, Share My Lesson) for English language arts lessons were of high quality. Based on their review of over 300 of the most downloaded materials, this study rated most of these materials as "mediocre" or "probably not worth using" (p. 11). A study completed by the

RAND Corporation titled “Implementation of K–12 State Standards for Mathematics and English Language Arts and Literacy” discussed how many online curriculum materials are misaligned or not fully aligned with the Common Core State Standards (CCSS) despite publishers’ claims to the contrary (Opfer et al., 2017). The study further describes how many online resources are not overseen by reviewers and may not be high quality, which can lead to variability in instruction, particularly impacting low-income schools. Though the study was not specifically focused on material marketed to SLPs, it is still relevant because school-based SLPs have a strong knowledge base to support the application of the CCSS, particularly within an integrated model like multi-tiered systems of support (MTSS; Sylvan, 2021). A search for “speech therapy” on TPT on 12/26/20 yielded 196,071 results of material geared towards students in pre-k through 12th grade. While an evaluation of these materials is well beyond the scope of this article, the high number of products geared to SLPs specifically on this website shows that this is an active area of consumerism for SLPs.

Sources of Guidance for SLPs

There are several guides for SLPs evaluating specific research studies but much less guidance on what factors SLPs should prioritize when making decisions about purchasing programs or materials to support treatment. There are several examples of published guides to help SLPs make evaluative decisions about research studies. As early as 1977, an article by Silverman titled “Criteria for Assessing Therapy Outcome in Speech Pathology and Audiology” explains that “Speech pathologists and audiologists function as both producers and consumers of information concerning therapy outcome. In both roles they have to know the questions that need to be answered to adequately evaluate a therapy method” (p. 5). This article offers a worksheet that guides SLPs to answer certain questions like “What are the effects of the therapy upon specific behaviors that contribute to a client's communicative disorder at given points in space-time?” (p. 7) and provides a rationale for why to ask each question. More recently, Dollaghan (2007) provided a rubric to evaluate treatment evidence called the Critical Appraisal of Treatment Evidence (CATE) in her textbook titled *The Handbook for Evidence-Based Practice in Communication Disorders.* The CATE provides a series of appraisal points to consider in evaluating the usefulness of a study, such as whether or not a control group was used, if the measure is valid and reliable, if treatment was delivered as described and intended, and if results are statistically significant. Dollaghan (2007) also provides a rubric to evaluate systematic reviews and meta-analyses, called the Critical Appraisal of Systematic Review or Meta-Analysis (CASM).

While less has been published about factors that should be carefully considered by SLPs when purchasing packaged programs, there are a few examples of guidelines and rubrics designed to help SLPs. ASHA (n.d.-e) provides a thorough list of questions for SLPs to consider when evaluating procedures, products, or programs. Examples include an analysis of the publications and research about the program, comparison to similar products, professional background of the developers of the product, and other considerations to help clinicians make informed decisions about packaged programs. Within the field, there are also rubrics and guidelines for specific contexts and populations. For example, Antoniadis (2014) discusses prioritizing green initiatives when choosing packaged programs. Her analysis includes recommendations for the gradual implementation of programs by vendors who supply reusable, recyclable, and recycled content, as well as other green-friendly features. Pindzola (1993) provides a guide for purchasing

programs to teach vocal hygiene. Similarly, multiple authors have created checklists or rubrics to evaluate apps marketed to SLPs. For example, Sweeney's (2010) FIVES criteria prompt SLPs to consider five key elements when making purchasing decisions related to apps: fair pricing, level of interaction, support through visuals, level of educational relevance, and whether or not the app is specific to speech and language goals for a particular student.

Purpose of This Study

The purpose of this study is to better understand how SLPs working with school-aged children evaluate different aspects of purchased packaged programs for intervention. Although there has been some guidance as to what SLPs should consider in purchasing packaged programs, there has been very little research about the application of this guidance to SLPs' behavior and decision-making related to purchasing packaged programs, tools, and resources. One preliminary study done in this area was completed by Edwards and Dukhovny in 2017, which examined app selection within a systematic technology training program, implemented for use by 21 university students in their initial clinical practicum. In this study, Edwards and Dukhovny also conducted a survey of how other university clinics assessed app and technology usage by surveying 35 members of ASHA's special interest group (SIG) for Issues in Higher Education. They found that 72% of SIG respondents indicated word-of-mouth as their primary decision-making influence and only 9% indicated that they had a systematic app rubric or review process in place. Beyond this study, which had a relatively small sample size, there are few formal studies of SLPs' decision-making around purchasing treatment materials. Our study presents the results of a survey about how SLPs function as consumers of treatment materials with the aim of better understanding factors that influence how SLPs make purchasing decisions. While this study does expand on previous research, we frame this research as a pilot study with the understanding that a broader investigation would be needed to fully understand SLPs' purchasing decisions of treatment materials.

Method

Research Design

A survey focused on SLPs' decision-making around packaged programs and factors which influence their choices was developed and administered for this study. The questions for the survey were selected based on our literature review in two main areas. First, some survey questions were based on previously published papers meant to guide educators' and SLPs' decision-making regarding purchasing teaching and intervention materials (e.g., Coyle, 2008; Edwards & Dukhovny, 2017; Silverman, 1977; Sylvan & Christodoulou, 2010). Secondly, other survey questions were inspired by the literature (including textbooks as well as less formal writing like blog posts and magazine articles) written to provide guides to SLPs in making intervention decisions (e.g., ASHA, n.d.-e; Dollaghan, 2007; EdReports.org Inc., n.d.; Sweeney, 2010). While formal piloting of the survey was not completed, several school-based SLPs informally reviewed the survey for readability, relevancy, and flow. Their preliminary feedback on the survey was incorporated. The survey was administered using Qualtrics (2018), a secure survey software (Qualtrics, 2020).

To gather both quantitative and qualitative information about opinions on and experiences with packaged programs, the survey included a consent form agreement, seven demographic-related

questions, eight multiple-choice, 15 Likert scale, and three open-ended questions. On many multiple-choice questions, participants were able to select multiple answers and/ or were invited to provide supplemental written responses. Several questions prompted participants to respond using a Likert scale ranging from 1 to 5 (1 = extremely important, 2 = very important, 3 = moderately important, 4 = slightly important, 5 = not at all important) to gauge how participants felt about several issues related to packaged programs. An additional Likert scale question prompted participants using a scale from 1 to 5 (1 = extremely likely to 5 = extremely unlikely) regarding the likelihood of creating their own materials.

The first question asked for participants' consent to participate in the study and all of the following questions were optional. A list of the survey questions (excluding the consent information and demographic questions) analyzed for the article, as well as the possible responses (if Likert scale or multiple choice) and the response rates for each question, can be found in Table 1. The institutional review board at Montclair State University reviewed and approved this study, which consisted of a survey administered in an online environment.

Table 1
Survey Questions and Response Rate

Survey Question	Response Count	Response Percentage
Have you ever used a packaged program (e.g., Social Thinking, Expanding Expression Tool, apps like Articulation Station, reading programs like Orton Gillingham) in your therapy with school-aged children?[a]	115	100%
Yes (91%, n = 105)		
No (6%, n = 7)		
Not Sure (3%, n = 3)		
How likely are you to create your own materials instead of purchasing a packaged program to teach a particular skill set?[e]	115	100%
Extremely likely (31%, n = 36)		
Somewhat likely (29%, n = 33)		
Neither likely nor unlikely (16%, n = 18)		
Somewhat unlikely (18%, n = 21)		
Extremely unlikely (6%, n = 7)		
List the four most useful packaged programs you have used in your practice in the past 3 years (some examples include Expanding Expression Tool, Super Duper Materials, any speech-language apps)[b]	110	96%
For packaged programs you have used or purchased, where did you first hear of these programs? Please select all that apply.[cd]	112	97%
Recommendation from colleague (70%, n = 78)		

Marketing materials on the internet or catalogs (48%, n = 54)		
Research reports or published research (24%, n = 27)		
Other (please explain) (23%, n = 26)		
How important are the following factors to you when you are determining whether or not to purchase a packaged program for intervention?[e]		
Price	114	99%
Extremely important (35%, n = 40)		
Very important (39%, n = 45)		
Moderately important (19%, n = 22)		
Slightly important (5%, n = 6)		
Not at all important (1%, n = 1)		
Convenience	114	99%
Extremely important (36%, n = 41)		
Very important (46%, n = 53)		
Moderately important (14%, n = 16)		
Slightly important (4%, n = 4)		
Not at all important (0%, n = 0)		
Environmentally-friendly	113	98%
Extremely important (9%, n = 10)		
Very important (14%, n = 16)		
Moderately important (27%, n = 30)		
Slightly important (34%, n = 38)		
Not at all important (17%, n = 19)		
Word-of-mouth recommendation	113	98%
Extremely important (16%, n = 18)		
Very important (32%, n = 36)		
Moderately important (37%, n = 42)		
Slightly important (12%, n = 14)		
Not at all important (3%, n = 3)		
The program is well known/ popular	113	98%
Extremely important (6%, n = 7)		
Very important (20%, n = 23)		
Moderately important (39%, n = 44)		
Slightly important (24%, n = 27)		

Not at all important (11%, n = 12)		
Time saving (lack of time to make own materials)	113	98%
Extremely important (50%, n = 57)		
Very important (33%, n = 37)		
Moderately important (12%, n = 13)		
Slightly important (4%, n = 5)		
Not at all important (1%, n = 1)		
The program is based on research-based theories and models	114	99%
Extremely important (57%, n = 65)		
Very important (31%, n = 35)		
Moderately important (9%, n = 10)		
Slightly important (3%, n = 3)		
Not at all important (1%, n = 1)		
Peer-reviewed studies or external evidence about the program	115	100%
Extremely important (35%, n = 40)		
Very important (34%, n = 39)		
Moderately important (21%, n = 24)		
Slightly important (8%, n = 9)		
Not at all important (3%, n = 3)		
Professional background of the program's developers	114	99%
Extremely important (29%, n = 33)		
Very important (32%, n = 36)		
Moderately important (25%, n = 29)		
Slightly important (10%, n = 11)		
Not at all important (4%, n = 5)		
ASHA statements on the product's topic	114	99%
Extremely important (9%, n = 10)		
Very important (30%, n = 34)		
Moderately important (25%, n = 28)		
Slightly important (21%, n = 24)		
Not at all important (16%, n = 18)		
Relationship to academic curriculum	115	100%
Extremely important (27%, n = 31)		
Very important (36%, n = 41)		

Moderately important (25%, n = 29)		
Slightly important (7%, n = 8)		
Not at all important (5%, n = 6)		
Alignment with student goals as specified by treatment plan and/or IEP	114	99%
Extremely important (65%, n = 74)		
Very important (26%, n = 30)		
Moderately important (5%, n = 6)		
Slightly important (3%, n = 3)		
Not at all important (1%, n = 1)		
Warranty and return policy	114	99%
Extremely important (2%, n = 2)		
Very important (10%, n = 11)		
Moderately important (35%, n = 40)		
Slightly important (39%, n = 44)		
Not at all important (15%, n = 17)		
A compelling need to make a change to existing treatment approach	115	100%
Extremely important (19%, n = 22)		
Very important (30%, n = 34)		
Moderately important (35%, n = 40)		
Slightly important (10%, n = 12)		
Not at all important (6%, n = 7)		
Are there any features or reasons not already mentioned that influence you to purchase or not purchase a packaged program?[b]	44	38%
Think about your experience reviewing published external evidence regarding packaged programs (i.e., peer-reviewed journals, systematic reviews, etc.). Have you been able to find:[a]	110	96%
Plentiful information about packaged programs (2%, n = 2)		
Adequate information about packaged programs (41%, n = 45)		
Minimal information about packaged programs (57%, n = 63)		
On average, how much do you spend on packaged programs per year?[a]	114	99%
$0-$100 (39%, n = 44)		
$100-$500 (50%, n = 57)		
$500-$1,000 (10%, n = 11)		

$1,000-$3,000 (2%, n = 2)		
Over $3,000 (0%, n = 0)		
Who pays for the packaged materials you use?[c]	115	100%
I pay for them myself (49%, n = 56)		
My employer reimburses these costs (32%, n = 37)		
My patients and/or their families pay for materials (0%, n = 0)		
I do not purchase packaged materials (6%, n = 7)		
Other (please explain) (13%, n = 15)		
What is the most you have spent on a single packaged product?[a]	115	100%
$0-$50 (18%, n = 21)		
$50-$100 (28%, n = 32)		
$100-$150 (13%, n = 15)		
$150-$200 (15%, n = 17)		
Over $200 (26%, n = 30)		
To what extent do you agree with this statement?: I am satisfied with the budget I have to purchase packaged programs.[a]	115	100%
Agree (31%, n = 36)		
Unsure (15%, n = 17)		
Disagree (54%, n = 62)		
Do you feel using packaged programs enhances your ability to be an effective SLP?[a]	115	100%
Yes (65%, n = 75)		
Unsure (18%, n = 21)		
No (17%, n = 19)		
Please list any additional feedback that may provide insight into our research study.[b]	33	29%

Note. Based on a sample of 115 total survey respondents. All question responses in this table were optional.

[a] Multiple-choice question, one answer only
[b] Open-ended question: respondents were provided an empty text box to respond to question
[c] Multiple choice question with option to provide additional written information
[d] Multiple choice question, select all that apply
[e] Likert scale question

Procedure

Given that the study's purpose was to explore opinions on packaged programs from those working with a school-aged population, survey data were collected directly from SLPs who were working with school-aged children at the time of the survey. We distributed the survey nationally

through three relevant Facebook groups (SLPs for Evidence Based Practice, School-Based SLPs: For Professionals Only, and Speech Pathologists at Large). We also sent the survey to mailing lists of ASHA SIG 1, Language Learning and Education, and SIG 16, School-Based Issues. No compensation was provided. Participants accessed the survey via an anonymous link and completed it, on average, in 5 to 10 minutes. The survey was open from July 6, 2020 to September 2, 2020.

Participants

The survey included seven questions focused on demographic information about the survey participants, including their geographic location, ASHA certification status, whether or not the participant was actively working with school-aged children, employment situations (e.g., working directly for a public school district, working for a contract company), hourly or annual salary, years as an SLP, and average caseload size. The information gathered from these demographic questions is included in Table 2. The survey was completed by 115 participants.

Table 2
Characteristics of Survey Participants

Demographic Parameter	Response Count	Response Percentage
Geographic regions[a]	n = 115	
Canada	1	1%
Midwest	17	15%
Northeast	54	47%
South	21	18%
West	22	19%
ASHA-certified speech-language pathologist working in a school and/or private practice setting	n = 115	
Yes	109	95%
No	6	5%
ASHA certification status	n = 115	
Certificate of Clinical Competence (CCC)	108	94%
Clinical Fellow (CF)	6	5%
Not certified by ASHA as an SLP	1	1%
Employment setting[b]	n = 115	
Special day/residential school	9	8%
Pre-elementary (preschool)	27	23%
Elementary school	76	66%
Secondary school (middle school, junior high, senior high)	43	37%
Student home(s)	12	10%

Administrative office	0	0%
Private practice	23	20%
Other	12	10%
Number of years as an SLP	n = 115	
0 - 5 years	27	23%
5 - 10 years	21	18%
10+ years	67	58%
Employment Status	n = 115	
Salaried employee, full-time	82	71%
Contractor, full-time	5	4%
Salaried employee, part-time	9	8%
Contractor, part-time	9	8%
Self employed	8	7%
Not currently employed	2	2%
Average monthly caseload	n = 114	
0-30	38	33%
31-60	59	52%
61-90	16	14%
91+	1	1%

Note. Based on a sample of 115 total survey respondents. All question responses in this table were optional.
[a]Geographic location was determined by how states are classified into geographic regions by the U.S. Census Bureau (n.d.)
[b] Multiple choice question, select all that apply

Data Analysis
Initially, all survey data were captured by Qualtrics (2018). After data collection was complete, all data were subsequently uploaded into Excel for data analysis. Percentages, averages, and standard deviations were calculated for the multiple-choice and Likert scale questions.

The research team, consisting of the three authors of this paper, coded and analyzed all responses to open-ended questions. For open-ended responses, the coding process was both collaborative and iterative. First, each open-ended question was separated into its own tab within Excel. The next step involved the research team familiarizing themselves with the data by reading through each response to generate common categories to serve as the codes. While some codes were derived from the study's conceptual framework, others were generated through the process of open coding (Maxwell, 1996; Strauss & Corbin, 1998). Through frequent meetings, the research team shared ideas for codes with each other and, through discussion, worked to reach a consensus on the best way to categorize responses. After the code list was generated, each

member of the research team reviewed all responses to the open-ended questions to identify appropriate codes and mark their columns. After all responses were coded by each of the research team members, the team came together again to resolve any inconsistencies that came up and reach a consensus. Finally, after the coding process was finalized and agreed on by all team members, the percentage of responses in each open-ended question that contained the related codes was calculated to identify the most frequently occurring responses for each open-ended question.

Results

This study provided data about SLPs' experiences with packaged programs and materials, covering five important categories of interest. These include 1) SLPs' use of packaged programs, 2) which packaged programs are most popular, 3) financial issues surrounding packaged programs, 4) specific factors that influence purchasing decisions, and 5) reflections on packaged programs.

SLPs' Use of Packaged Programs

Our survey sought to understand SLPs' use of packaged programs in comparison to the creation of their own materials. In this study, nearly all participants (91%, n = 105) indicated that they had previously used a packaged program in their therapy with school-aged children. While most participants have used packaged programs, survey participants strongly indicated they did not rely solely on such programs, with the majority indicating they were likely to create their own materials to teach particular skill sets. Specifically, when survey participants were asked on a five-point scale how likely they were to create their own materials instead of purchasing a packaged program to teach a particular skill set (extremely likely, somewhat likely, neither likely nor unlikely, somewhat unlikely, or extremely unlikely), the majority of respondents answered that they were "extremely likely" (n = 36, 31%) or "somewhat likely" (n = 33, 29%).

Which Packaged Programs are Most Popular?

When participants were asked in an open-ended question to list the four most useful packaged programs they had used in their practice within the last three years, 110 participants responded and 91 products were mentioned. Many respondents provided less than four programs and two respondents provided five programs. Specificity of products varied, with some specific programs included in responses (e.g., Orton-Gillingham) and many mentions of companies that publish multiple tools (e.g., Super Duper). The most popular products mentioned were Super Duper (overall company rather than an individual Super Duper product; n = 37, 41%), EET (n = 36, 40%), Little Bee apps (n = 36, 40%), Social Thinking products (n = 28, 31%), and TPT products (n = 18, 20%). In addition, there were 27 mentions of specific products that are published by Super Duper, which were coded separately (e.g., Granny's Candies). Additional popular publishers with multiple specific products mentioned included MindWing Concepts (Story Grammar Marker and Braidy, n = 10, 11%) and Lindamood-Bell (Visualizing and Verbalizing, LiPS, and Seeing Stars; n = 9, 10%).

There was a wide variety of types of products mentioned. Of the 91 products, 20 were apps or groups of apps, the most popular of which were Little Bee apps. There were 26 online and computer sources, including online vendors with products from multiple sellers (e.g., TPT),

websites with a variety of resources (e.g., Say it Right), subscription websites (e.g. Ultimate SLP), computer software programs (e.g., Earobics), and a video conferencing platform (TheraPlatform). There were also miscellaneous products mentioned, such as reading programs (e.g., Barton Reading Program and Lindamood-Bell programs) and physical products like flashcards and props.

The large majority of programs listed (n = 73, 80%) need to be purchased. Some of these programs have a free trial period (i.e., several subscription websites) or a "lite" version if relevant to the format (i.e., many of the apps). Eight platforms, such as TPT and Boom Cards, offer a combination of paid and free products. Six products were free, primarily apps (e.g., symbol-it, Toca Boca). Cost of the remaining products could not be found. Several participants expanded on their product preferences through the open-ended format, with one claiming "I do not use them as 'programs' but take bits and pieces" and another saying "I use hybrid approaches, perhaps incorporating package materials into my session along with my personalized approach." One participant said, "I no longer used packaged materials because they don't meet EBP standards."

Financial Issues Surrounding Packaged Programs

Several survey questions probed for financial perspectives regarding budgets and spending issues. Participants were asked how much they typically spend on packaged programs per year. Half of the participants (n = 57, 50%) indicated they spend between $100 to $500 per year on packaged programs while another 39% (n = 44) indicated they spend under $100 a year. Only 10% of participants (n = 11) indicated that they spend between $500-$1,000 per year, 2% (n = 2) indicated that they spend between $1,000-$3,000 per year, and no participants indicated that they spend over $3,000 per year.

When participants were asked about the largest amount they had spent on a single packaged product, results were varied. While the largest percentage of respondents (28%, n = 32) indicated that the most they spent on a single product ranged from $50-$100, there was notable variation in responses. Over a quarter of respondents (26%, n = 30) indicated that they had spent over $200 on a single product while several others (18%, n = 21) indicated that the most they ever spent was $50 or less on a given product. Fewer participants (15%, n = 17) indicated they had spent $150-$200 on a given product. Even fewer participants (13%, n = 15) indicated that they spent between $100-$150.

When participants were asked who pays for their packaged materials, they were given multiple-choice options and an option to fill in an "other" response. Almost half of participants said they pay for their own packaged materials (n = 56, 49%) and about one-third said their employer reimburses their costs (n = 37, 32%). Seven participants (6%) said they do not purchase packaged materials. No respondents indicated that their patients and/ or families pay for materials. Fifteen participants (13%) provided "other" responses, 13 (11%) of whom indicated that materials were paid for in combination by their employer and themselves. One participant explained "I don't have a budget, but sometimes I can justify the district in buying something I need or I buy it myself" and another indicated that their "employer reimburses up to $200.00" but "I buy the rest." Additional "other" responses indicated that their purchases are considered self-employed business expenses or that coworkers had purchased the materials. When

participants were asked if they agreed with the statement "I am satisfied with the budget I have to purchase packaged programs," over half of participants (54%, n = 62) said they disagreed. Thirty-six participants (31%) said they agreed, and the remaining 17 participants (15%) said they were unsure.

Specific Factors That Influence Purchasing Decisions

Participants were asked about how they first heard of programs or materials they have used or purchased in a select-all-that-apply multiple choice question with an option to provide a write-in answer. The most frequent response was "recommendation from a colleague" (n = 78, 70%), followed by "marketing materials on the internet or catalogs" (n = 54, 48%). Approximately 24% (n = 27) indicated that they first heard of programs from "research reports or published research." Of the 26 participants (23%) who provided "other" answers in an open-ended format, 15 mentioned conferences, CEUs, trainings, and workshops, and three mentioned social media/ email.

In an effort to learn about specific priorities for SLPs when purchasing packaged products, survey participants were asked about 14 factors that may or may not influence their purchasing decisions. A Likert scale ranging from 1 to 5 was used for participants to indicate how important each factor was in impacting their purchasing decisions (1 = extremely important, 5 = not at all important). The most important factors in influencing purchasing decisions were alignment with student goals as specified by treatment plans and/ or IEPs (M = 1.48, SD = 0.79), the program being based on research-based theories and models (M = 1.60, SD = 0.82), times savings and lack of time to make their own materials (M = 1.73, SD = 0.89), convenience (M = 1.85, SD = 0.79), and price (M = 1.97, SD = 0.91). Factors that many considered "very important" to "moderately important" included peer-reviewed studies or external evidence about the program (M = 2.10, SD = 1.05), relationship to academic curriculum (M = 2.28, SD = 1.09), professional background of the program's developers (M = 2.29, SD = 1.11), word-of-mouth recommendations (M = 2.54, SD = 0.99), and a compelling need to make a change to existing treatment protocol (M = 2.55, SD = 1.1). Finally, the factors that were considered "moderately important" to "slightly important" included ASHA's statements on the product's topic (M = 3.05, SD = 1.22), the program being well-known or popular (M = 3.12, SD = 1.05), environmental friendliness (M = 3.35, SD = 1.17), and warranty and return policy (M = 3.55, SD = 0.92).

In a multiple-choice question, participants were also asked how much research they had been able to find about packaged programs when reviewing external evidence such as articles in peer-reviewed journals and systematic reviews. The majority (n = 63, 57%) indicated that they have only found minimal information about packaged programs. Forty-five participants (41%) indicated that they have been able to find adequate information about packaged programs in external evidence, and only two participants (2%) indicated that they have found plentiful information about packaged programs.

When SLPs were asked if there were any additional features or reasons they had to add to the list of potentially influential factors, 44 participants gave responses. Almost half of these 44 participants (n = 20, 45%) indicated that they consider whether or not the program aligns with their personal needs, philosophy, or preferences. One participant said they consider "delivery

modality, for example, now Boom cards are helping with Telepractice" and another indicated that they look for "access to manipulatives or visual aids." Examples of other topics mentioned by these 20 participants included ease of storage and preference for a homework component. Sixteen participants (36%) mentioned that they look for whether or not a program is student-centered, such as "vocabulary that matches with the demographic of students I work with." Fifteen participants (34%) mentioned adaptability as being an important consideration. One participant said, "I look for prescriptive not scripted programs," and another considered "if the program is able to be adapted for a variety of uses." Another participant said, "Oftentimes I do not use programs only in the specific way they were designed to be used." Six participants (14%) provided other answers, including the program's ability to evolve with research, the program being given or loaned to the participant, ASHA convention vendor highlights, and YouTube video demonstrations. Additionally, six participants (14%) listed reasons not to use programs with one participant noting, "To be honest, I avoid packaged materials."

Reflections on Programs Available for Purchase

In a multiple-choice question, survey participants were also asked if they felt that using packaged programs enhanced their ability to be an effective SLP. The majority (n = 75, 65%) responded that yes, they felt packaged programs helped them become effective as SLPs. Twenty-one respondents (18%) indicated "unsure" and 19 respondents (17%) said "no." Thirty-three participants responded to an open-ended question asking if they had any additional feedback for our consideration. The feedback was variable, but was primarily positive (n = 11, 33%). For example, one respondent explained "these programs, if research based, do save time in terms of identifying critical elements to focus on/incorporate in therapy," and another said, "the best thing I liked about packaged products is that they save so much time since I do not have to create the materials myself." Eleven (33%) respondents mentioned the need for critical thinking or ability to adapt the program as needed (e.g., "I have never used a packaged program exactly as it was intended. Students rarely fit the exact mold to benefit from a packaged program as it is published. I learn from the programs, but ultimately am more effective doing my own critical thinking to plan and execute treatment."). Seven participants (21%) had primarily negative feedback when discussing packaged programs. One participant said, "I view most packaged programs as a money-making vehicle for publishers and authors," and another explained "I feel skeptical of packaged programs in general. Many claim they're evidence-based, but aren't strongly so, or don't do well at backing each of their statements with the evidence. I also feel that they may encourage a 'one-size-fits-all' approach, whereas our profession needs to be individualized per client." Four participants (12%) provided advice for companies or employers, with one respondent saying "companies need to reach out to districts and make purchasing deals or we will never get their products" and one respondent indicated that they "would like school districts to fund the purchase of programs and materials for all of their SLPs." Three (9%) respondents provided feedback on the survey content and format.

Discussion

Many SLPs Use Packaged Programs and Invest Financial Resources

This survey found that most (91%) participants have used packaged products and the majority (65%) felt packaged programs help them become effective as SLPs. To support the use of these products, most SLPs reported investing money in these products. The most common amount

spent per year was $100-$500. While 32% noted that their employer reimbursed some of the costs, 49% pay for their own products, and 11% share the cost with their employers.

Given the frequent usage of purchased materials and the associated financial investment, it is unsurprising that participants considered price an important factor and that most participants reported being unsatisfied with their budget in this area. This aligns with the ASHA Schools Survey (2020), which mentions out-of-pocket educational expenses as a challenge for 36% of respondents. It is also consistent with a 2020 survey of over 1,600 K-12 teachers conducted by IESD Market Research, Agile Education Marketing, and SheerID, which found that 87% of teachers typically spend their own money on professional needs, with elementary school teachers spending an average of $250 per year before the COVID-19 pandemic. While SLPs are not teachers, many SLPs working with school-age children may work in public schools and seem to exhibit similar spending patterns to other educators.

Considering that many educators, including SLPs, spend a significant amount of their own money on supplies, it is essential for educators to be critical consumers and purchase wisely. Clearly, the stakes of these investments will vary depending on the price point of a particular product. The products SLPs mentioned using in this survey ranged from expensive, professionally-marketed programs to cheaper game-like activities. Types of products varied too, including apps, website subscriptions, for-fee downloadable and printable materials from online marketplaces like TPT, as well as physical products and programs. The variety of products is remarkable and the fact that 91 products were mentioned in this survey of only 110 responses underscores the variety in needs and preference, as well as available options.

Practical Considerations Lead SLPs to Consider Word-of-Mouth and Marketing

Practical considerations and ease seemed to be at the forefront when analyzing both how SLPs found out information about packaged programs and how they made purchasing decisions. For one thing, the vast majority (70%) of participants indicated that they first heard of packaged programs as recommendations from a colleague and almost half said they learn about products from marketing materials. Fifteen participants mentioned conferences, CEUs, training, and workshops when writing in a response under “other.” Word-of-mouth recommendations were also considered very or moderately important ($M = 2.54$, $SD = 0.99$) in prioritizing packaged programs to purchase. Time, savings, and convenience were rated by survey respondents as among the most important factors when deciding which products to purchase. Additionally, many of the open-ended comments regarding purchasing decisions focused on practical issues (e.g., “ease of use, number of components, ability to store, and use for multiple areas of support”).

Given the multiple demands on SLPs’ time and the high caseloads that many SLPs have, especially in school settings, it is unsurprising that practicality and ease are major factors in how SLPs gain information and make decisions. ASHA’s 2020 Schools Survey indicated that 82% of respondents feel that the large amount of paperwork associated with their roles is one of their greatest challenges, and more than half of ASHA’s respondents (57%) felt greatly challenged by high workload or caseload size. Conversations with colleagues and viewing marketing material may be the most accessible and straightforward way to learn about new products, and the result

of this survey seemed to indicate these two channels have been successful at influencing many SLPs' purchasing decisions.

Notably, approximately half of the participants (48%) stated they learned about products from marketing materials. This indicates that messages from marketing play a prominent role in how SLPs learn about and potentially make decisions about products or tools to use in their practice. Unsurprisingly, marketing products would be a large area of emphasis for product developers because companies must earn revenue. The market for educationally- and clinically-relevant materials for the school-aged population is large and SLPs are part of this market (53% of SLPs are employed in schools; ASHA, n.d.-a). Educators overall have been identified by marketers as a key target audience. Marketers can be quite savvy in reaching educators; a data-driven report by Market Data Retrieval (MDR; 2020), which analyzed over 6,300 online marketing campaigns (email, Facebook, and paid ads), found key trends that echoed some of the results found in our study. This report declared that classroom tools should be "practical, relevant, visually appealing, and tailored to their [educators'] needs," and either "current and topical to what they [educators] are teaching" or "useful from one school year to the next" (p. 52).

To take a closer look at the messages SLPs may be getting from marketing materials, we looked at the promotional material and/ or websites of the 91 products mentioned by participants of our survey to gain more insight into the content of the marketing messages frequently used for products marketed to SLPs. We found over half (n = 50, 55%) of programs mentioned in this survey are described with terminology like "research," "evidence," or "science." For example, Super Duper, the most popular product mentioned by survey participants, has a list of products labeled "evidence-based," which they describe as "relying on current research to develop practical, effective teaching materials" and they "look to scientifically researched theories and articles" as a guide to provide "products that work when you use them with your students" (Super Duper Publications, n.d., para. 1). While on one hand, this kind of marketing focused on research and science reflects that product developers understand that SLPs and other educators are likely to value research when making treatment choices (McCabe & Castel, 2008; Simons et al., 2016), it also puts the onus on SLPs as consumers to evaluate such claims given that statements in marketing materials may not be peer-reviewed or otherwise evaluated by experts.

It is noteworthy that, in strategically reaching their target audiences, marketers consider the influence of social media, email, and other online channels. There are several guides regarding how to specifically target educators, many of which point to social media and online venues. For example, according to MDR's 2020 report, educators are "more digitally inclined than the general population" (p. 6), considered "an extraordinary opportunity for organizations" (p. 4), and are influential and trusted among their academic communities. While only 67% of the overall U.S. population uses Facebook, 83% of educators use Facebook (MDR, 2020). MDR's report looks at the importance of both organic social marketing, which is free for the brand, and paid social ads that require a monetary investment. Word-of-mouth and organic social media marketing go hand-in-hand; there are multiple Facebook groups geared towards SLPs where resources are shared or recommended on a regular basis (e.g., "Teletherapy Materials for Speech-Language Pathologists" and "Speech Pathologists at Large," both of which have over 40,000 members as of 12/26/20). Several participants in our survey mentioned social media as a source where they learned about packaged programs, with one specifically calling out "SLP

groups on Facebook." Understanding that educators are trusted and influential, social media is an essential medium to reach educators, and social media provides a natural method of spreading information about products, it is no surprise that word-of-mouth and marketing are both important contributors to the decisions SLPs make about packaged programs.

Adaptability and Alignment With Student Needs and SLPs' Philosophy

Alignment with client goals and the SLP's personal preferences or philosophy also seemed to be key driving features in making purchasing decisions. The most important factor indicated by participants (M = 1.48, SD = 0.79) was alignment with student goals as specified by treatment plans and/ or IEPs. The relationship to academic curriculum, while still important, was less so (M = 2.28, SD = 1.09). It is worth reflecting on why survey respondents placed a different value on aligning with student goals versus the academic curriculum. Given that IEPs and goals are meant to support students' progress in the curriculum, one might have expected these factors to be more closely aligned. It is possible that participants thought of this question more narrowly and focused on curriculum with respect to daily lesson plans (e.g., the students are studying endangered animals) versus considering broader alignment with standards like the common core state standards. It may be that as more schools adopt integrated programs such as the ones posed in MTSS (Sylvan, 2021) and interprofessional practice (ASHA, n.d.-c), the separation of IEP goals and curriculum may narrow. Beyond consideration of student goals and the academic curriculum, respondents also noted other ways that alignment with student needs was important. For example, 16 participants focused on student preferences and priorities, describing specific client needs as important (e.g., "vocabulary that matches with the demographic of students I work with") or mentioning student success or motivation as a driving factor for purchasing decisions (e.g., "ability to connect or engage students with the presented material").

In addition to alignment with student needs, participants also highlighted the alignment with their personal treatment outlook and/ or philosophy. For example, "a compelling need to make a change to existing treatment protocol" was selected as a key factor in making purchasing decisions, showing that SLPs were looking for products that more closely aligned with their therapeutic approach. When answering an open-ended question about ideal features of packaged programs, 20 participants considered whether a program aligned with their personal needs, philosophies, or preferences. Further, 33% (n = 11) of respondents mentioned the need for critical thinking or ability to adapt the program as needed with one participant stating, "I have never used a packaged program exactly as it was intended. Students rarely fit the exact mold to benefit from a packaged program as it is published," further indicating that adaptability and flexibility were important in program selection. This is interesting because programs and approaches that can be adaptable and flexible are unlikely to be scripted approaches that can be used, tested, or validated with a high level of treatment fidelity. Dollaghan (2007) includes treatment fidelity, which concerns whether or not a treatment is administered as intended, as a measure by which to critically analyze treatment evidence (in the CATE, discussed earlier). The assumption is that a strong research study proves the effectiveness of a particular treatment when it is delivered with fidelity, but this does not necessarily translate into the "real world of routine clinical practice" (Dollaghan, 2007, p. 60) when SLPs use a program in a flexible manner. The fact that respondents highlighted that they like programs that can be adapted and modified underscores the challenge of relying on peer-reviewed studies to justify the decision to purchase products.

The Role of Evidence in Making Purchasing Decisions

Beyond demonstrating how practical considerations and SLPs' preferences impacted purchasing decisions, this survey provided unique insight into how SLPs factor in external research and empirical evidence when making purchasing decisions. Some important data points highlight the comparably less prominent direct influence of peer-reviewed research on SLPs' purchasing decisions. For one thing, only a quarter of participants (24%, n = 27) indicated that they first heard of programs from "research reports or published research," with many more indicating they heard about products through word-of-mouth (70%, n = 78) or through marketing materials (48%, n = 54). Additionally, participants ranked peer-reviewed studies or external evidence about programs (M = 2.10, SD = 1.05) as ranging from "very important" to "moderately important" in how they made purchasing decisions with factors like price, convenience and time saving, and other factors ranked as much more important. Finally, the majority of respondents (n = 63, 57%) indicated that they have only found minimal information about packaged programs within the research, with only two participants (2%) indicating that they have found plentiful information about packaged programs. These data points seem to indicate that high-quality peer-reviewed research, while viewed as valuable, is not the primary way SLPs hear about or gain information about treatment materials available for purchase.

However, it is crucial to underscore that the concept of "research" related to a given product extends beyond research that is conducted specifically on a product, and more general research ideas might be used to justify treatment choices with respect to materials. Respondents indicated a "program being based on research-based theories and models" (M = 1.60, SD = 0.82) as more important than "peer-reviewed studies or external evidence about the program" and that they also considered the "professional background of the program's developers" to be moderately to very important (M = 2.29, SD = 1.11). This indicates that SLPs view research, especially as it relates to clinical decisions, beyond the narrow interpretation of only published peer-reviewed research specific to a given product as being relevant.

This idea is explored in the article "Social Thinking® Methodology: Evidence-Based or Empirically Supported? A Response to Leaf et al. (2016)" by Crooke and Winner (2016), the developers of Social Thinking products, which are a group of products found to be frequently used by respondents to this survey. In this article, they argue that a close look at Social Thinking products provides "an excellent context for clarifying the now well-established distinction between evidence-based practices (EBP) and empirically supported therapies (EST)" (p. 404). This article defines EBP as "practices based on the best available research combined with clinical expertise and stakeholder input" as differing from ESTs, which are "treatments that have achieved a level or threshold of multiple experiments and publications...with experimental control on a distinct set of manualized procedures within a well-defined population" (p. 404). After explaining this distinction, they assert that ESTs represent an "overly restrictive evidentiary standard that can typically only be applied to that particular distinct set of procedures and is not readily applicable to the sort of complex methodologies … usually seen in real world practice" but that EBP is "considered more plausible in representing practice in everyday settings" (p. 404). They state Social Thinking "has never made claim to being an EST" but is consistent with the three-pronged definition of EBP (p. 404).

This distinction between treatments supported by more generalized research-based theories versus highly specific treatment studies (EBP vs. EST) seems to be recognized by participants of this survey, who viewed the fact that a program was "based on research-based theories and models" as a more important factor than a program based on "peer-reviewed studies or external evidence about the program." This also explains why SLPs, while valuing EBP, may feel justified in using a wide variety of materials available for purchase like games, worksheets, and other materials on frequently used platforms like TPT that are not likely to be potential candidates to be subjects of peer-reviewed research. Many materials that SLPs use or purchase may serve as reinforcement or as motivation for children to practice skills. For example, an SLP might consider using a game featuring minimal pairs to practice articulation, such as those available from Boom Cards or Super Duper. It is not logical that the developers of such games would conduct peer-reviewed clinical research, but the game may be judged to be "evidence-based" since the minimal pairs approach does have an evidence base (e.g., Tyler et al., 1987; Weiner, 1981). If an SLP sees that a child enjoys a reinforcement game and has shown progress with that game, logic tells us to continue using the game even though the game itself has not been peer-reviewed.

Given this, it is clear that the challenge SLPs face in evaluating the research base of any given product is far from straightforward. Because SLPs focus on evaluating the "research-based theories and models" behind a product or approach highlights that their decision-making goes well beyond evaluating the strength of published treatment study. This is especially true given that many products used by SLPs with school-aged children are not scripted treatment programs designed to be used with a high level of fidelity. The fact that this degree of flexibility and adaptability of products is valued by SLPs selecting products underscores the complexity of the tasks SLPs face determining if their purchases are consistent with evidence-based practice.

Limitations and Future Directions

It is necessary to note that there were some limitations to this study. First, the data collected in this study were from an anonymous voluntary survey and therefore were vulnerable to human error, lack of conscientious responses, and accessibility issues. Additionally, there was a relatively small sample size (n = 115) so results may not reflect themes or insights that would be apparent in a broader survey. Further, this study focused only on SLPs who work with school-aged children so the results might not be generalizable to SLPs working with an early childhood or adult population.

Another limitation of this study is the demographic of the participants. When comparing our participant demographics to the ASHA 2020 Schools Survey, there are some distinct differences that may be a result of this small sample. Namely, our survey over-represents the northeast (47% of respondents) while underrepresenting the midwest (15%) and south (18%) in comparison to the ASHA 2020 School Survey, which had 26% of participants from the northeast, 24% from the midwest, and 32% from the south. Further, more SLPs who completed our survey reported working in preschool (23%) and secondary schools (37%), compared to the ASHA Schools Survey (2020), which has 13% of respondents working in preschools and 13% in secondary schools. However, it is notable that the ASHA survey only allowed participants to select one facility that best described their work setting (with an option to choose "combination from the

above list" instead of a specific facility) while our survey allowed multiple settings to be selected. It is important to note that our survey was relatively consistent with the ASHA Schools Survey (2020) in terms of full-time versus part-time SLPs and salaried versus contracted SLPs. Our survey found 76% of participants worked full time (compared to the ASHA 2020 Schools Survey which found 86%) and our survey found 79% reported being salaried SLPs (versus contractors, self-employed, or not currently employed), where ASHA's survey that found 88% of school-based SLPs were paid via a salary.

Another important issue to consider is possible bias or errors in interpreting the data, particularly for the open-ended questions. In terms of analyzing the qualitative data from this study, an effort to control for bias was made by making decisions regarding this project collaboratively and reflectively as a research team. Another potential area for bias is related to our analysis of the features (e.g., price, research-based claims) of the most popular packaged programs mentioned by participants when considering the results of this survey. Product information was gathered online. Information presented in this paper about evidence-based claims, paid versus free products, types of products (e.g., physical products), and other descriptions of programs may not be fully correct for this reason. It is worth considering, however, that online information-gathering may be the most prominent way that SLPs learn about the features of packaged programs so this methodology reflects real-world considerations of SLPs.

Answers to questions may have been influenced by how questions were written or the timing of the survey. In order to make sure our questions were clear, we included examples of packaged programs within two of the questions. This may have inadvertently influenced responses to the open-ended question about the four most useful package programs used in practice in the last three years. Additionally, participants completed this survey in the midst of the COVID-19 pandemic, which may have affected their perceived most useful packaged programs, opinions about financial elements tied to packaged programs, and additional thoughts regarding the survey as a whole. During the COVID-19 pandemic, many SLPs transitioned their service models to an online format and often could not access their materials (Sylvan et al., 2020), which may have lead to more use of online programs and the need for additional budget to adapt to a digital service model. Over a quarter (n = 26) of the 91 programs that were mentioned when participants were asked which four programs they used most often were online and computer programs.

There are many potential future directions to take based on the findings of this study. It would be useful to conduct a broader survey of SLPs to see if similar results are found when examining the purchasing decisions of SLPs working with additional populations, rather than just school-aged children. It would also be interesting to have SLPs review theoretical marketing material and see how they react to varying types of claims made by product developers. Given the timing of this study and the potential impact of the COVID-19 pandemic on how SLPs make purchasing decisions, it would be interesting to analyze the impact of COVID-19 on opinions of packaged programs by speech-language pathology graduate students. Due to the COVID-19 public health emergency, many graduate students may have lacked access to physical materials that they otherwise may have had the chance to use in their clinical training. On the other hand, they might have had a greater opportunity to trial digital products during their graduate training, which may influence their perceptions of such products. Even more broadly, it is likely that many SLPs have been relying on virtual products in the COVID-19 pandemic more than in previous years due to

the increase in telepractice service delivery (Sylvan et al., 2020). It will be interesting for future studies to investigate if this experience influences SLPs' view of virtual versus physical products after the pandemic ends.

Conclusion

Like other educators, SLPs working with school-aged children face a vast array of choices when purchasing products to support their treatment, ranging from $1 worksheets on websites like TPT to programs that cost over $200. While SLPs have the clinical expertise to support students without necessarily purchasing any specific materials, nearly all SLPs who responded to this survey reported they purchased such tools and many reported investing their own money in these materials. This study found that issues of practical significance like price, convenience, and time saving are major drivers in SLPs making purchasing decisions and that SLPs value products that align with students' goals and are flexible. This study also found that word-of-mouth recommendations, marketing materials, and conferences are major sources of information for SLPs to learn about products.

While many products frequently used by SLPs completing this survey highlighted the "research" or "science" in their promotional materials, this study shows that how SLPs consider the role of research in making decisions about products is complex. While few SLPs completing this survey reported that there is ample peer-reviewed research related to products available for purchase and many rated other factors as more important than peer-reviewed research in making purchasing decisions, many indicated that products having a research-based theoretical framework is important. This idea that a product can be supported by a strong research-based theoretical framework and is thereby consistent with the principles of EBP, even while not being directly validated by a well-controlled empirical study, has been discussed by product developers such as those who developed Social Thinking products. This raises critical questions about what kinds of decisions made by SLPs need to be supported by external research in order to be considered evidence-based and the challenges SLPs may face applying the three-pronged definition of EBP to purchasing decisions. Given the complexity of the factors that may potentially be considered and the many products that SLPs can theoretically consider when supporting school-aged children, this study indicates that it would be useful to develop a rubric for SLPs to use to better evaluate the pros and cons of a specific packaged program before buying it. This research also suggests that a centralized website or resource that evaluates materials geared towards educational professionals working with school-age children would be of great value.

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About the Authors

Dr. Lesley Sylvan is an associate professor in the Department of Communication Sciences and Disorders at Montclair State University. Dr. Sylvan is a certified speech-language pathologist (SLP) with extensive clinical experience working with school-aged children both in public school and private clinical settings. She completed a Master's degree in educational policy and management as well as a Doctorate degree in human development and education from the Harvard Graduate School of Education. Her research focuses on the intersection between the field of education and the field of speech-language pathology.

Erica Goldstein is a speech-language pathologist working with children and adults in various settings. Erica has a strong interest in the practices of speech-language pathologists working with school-age children and contributes to research related to this area.

Dina Hafez is a speech-language pathologist working with children in various settings, including early intervention, private practice, and education. Dina has a special interest in working with school-aged children in public school settings.

Essential Dispositions for Inclusive Educators: An Examination of National Standards and Guiding Principles

Joanne M. Van Boxtel, Ph.D.
Vanguard University

Megan Chaney, Ed.D.
Fresno Pacific University

Abstract

Dispositions for inclusive pre-service teachers are recommended by numerous professional organizations and are currently being assessed within teacher preparation programs. Leading professional organizations and agencies have published standards and guiding documents related to essential dispositions for inclusive pre-service and in-service teachers. However, a widely accepted single definition of teacher dispositions does not exist in the literature and there is limited consensus among Institutions of Higher Education (IHEs) regarding the prioritization of dispositions for inclusive pre-service teachers. Assessing essential dispositions remains problematic due to the diverse ways dispositions are operationalized but standards-based approaches are recommended. The researchers examined dispositions defined as behaviors, characteristics, and perceptions within published standards and guiding principles documents of leading professional organizations and agencies to discover consistencies among them. Implications and recommendations for special education teacher preparation programs are discussed.

Keywords: disposition, inclusive education, educator preparation programs

Essential Dispositions for Inclusive Educators: An Examination of National Standards and Guiding Principles

The emerging field of dispositional research pertaining to teacher preparation is evolving (Bauer & Thornton, 2013; Cummins & Asempapa, 2013; Cosgrove & Carpenter, 2012; Ellis et al., 2000; Johnston et al., 2011; Jung & Rhodes, 2008; LePage et al., 2008; McCall et al., 2014). Dispositional development of inclusive pre-service teachers has gained attention from national accreditation organizations such as the Council for the Accreditation of Educator Preparation (CAEP) (Jung & Rhodes, 2008; Nelsen, 2014). CAEP called attention to dispositions within accreditation standard 3.3 noting that, "Educator preparation providers establish and monitor attributes and dispositions beyond academic ability that candidates must demonstrate at admissions and during the program" (CAEP, 2015, p. 9). Similarly, the Council for Exceptional Children (CEC) established twelve Ethical Principles and Practice Standards for Special Educators for programs seeking national recognition (CEC, 2015). Recent findings on dispositions caution teacher educators that pre-service teachers may become complicit in the reproduction of social inequalities as demonstrated by beliefs that schools are doing well and exhibiting neutrality toward controversial educational topics (Saultz, et al., 2021).

Research supports that teacher preparation programs and educators in varying roles within institutions of higher education including university supervisors, mentor teachers, and pre-service teachers, define teacher disposition differently. These differences surface within teacher preparation subject areas such as single subject English and special education (Shoffner, et al., 2014). Despite the lack of agreement on a shared definition of disposition, professional organizations and researchers alike agree a focus on dispositions within teacher preparation programs is essential (CAEP, 2015; Interstate New Teacher Assessment & Support Consortium [INTASC], 1992; Rinaldo & Vermette, 2009; Shoffner et al., 2014). While the focus is essential, the construct of dispositions is complex (CAEP, 2015; INTASC, 1992; Rinaldo & Vermette, 2009, Sockett, 2009). Teachers' foundational dispositions are at the heart of pedagogical decisions a teacher makes while instructing students and a teacher's style or approach may impact the teaching and learning process to a greater extent than his or her pedagogical knowledge (Bauer & Thornton, 2013; Sherman, 2006). Therefore, dispositions must be made explicit to inclusive pre-service teacher candidates within teacher preparation programs if they are to grow and develop into effective teachers.

The purpose of our study was to explore dispositions for inclusive pre-service teachers recommended by leading organizations and accrediting agencies to discover consistencies and make them explicit. Our decision to examine dispositions named within standards and guiding principles of national professional organizations and accrediting agencies was based on the assumption that they represented wide consensus in the field distilled from research findings and informed by various experts and stakeholders. Our research questions were:

1) To what degree are dispositions defined as teacher behaviors, characteristics, and perceptions evident within principles and standards documents of professional organizations related to inclusive and special education teacher preparation?

2) What common dispositional themes emerge from principles and standards documents of professional organizations related to inclusive and special education teacher preparation?

Review of Literature on Educator Dispositions

Dispositions Defined

Interest and research in teacher dispositions dates back to the early 60's. The origins of teacher dispositions have been credited to Combs et al. (1969), who categorized dispositions into five distinct perceptions, which include: (a) perceptions about self, (b) perceptions about others, (c) perceptions about the subject field, (d) perceptions about the purpose and process of education, and (e) one's general frame of reference perceptions. More recently, dispositions have been understood to be how a teacher's commitment to the profession and ethics show in professional practice (Johnston et al., 2011; Rinaldo & Vermette, 2009). Dispositions can be understood as a teacher's belief systems, individual values, patterns of behavior, inclinations toward a certain way of thinking, as well as the ability to be critical, challenging, facilitative, creative, empowered, and connected in one's thinking (Bauer & Thornton, 2013). Effective teachers exhibit the dispositions of commitment to professional ethics and strong communication skills (Singh, 2011). Dispositions of kindness to students and families, fairness in the classroom and

school setting, honesty with students and parents, patience for students, and empathy for student situations are also dispositions to be exhibited by an effective teacher (Sherman, 2006). Supplemental dispositions of education professionals are self-assessment, peer-assessment, and critical reflection on the efficacy of teaching practices (Rinaldo & Vermette, 2009; Johnston et al., 2011). Teachers who are retained in the field reported dispositions of commitment to hard work and perseverance through difficult situations that was nurtured and developed within their pre-service teacher education program (Freedman, & Appleman, 2009).

In an attempt to unpack the complexity of dispositions, scholars have categorized dispositions through overarching domains or virtues such as character, intellect, and care (Sockett, 2009) as well as personality, behaviors, and the ability to encourage human development (Jung & Rhodes, 2008). Wasicsko et al., (2004) noted that it is feasible to assume the disposition construct falls along a continuum from observable behaviors to inferable personality traits and that it is anything not falling in areas of knowledge or skills. Domain categories proposed by Wasicsko et al., (2004) are:

a. Teache**r Behaviors** – Observable activities of candidates during class activities or with children, including behaviors such as the person writes and speaks standard English, is punctual, smiles, and has a neat/orderly appearance, etc.

b. Teacher **Characteristics** – Attributes or tendencies of candidates that are persistently demonstrated, such as tolerance of differences, open-mindedness, patience, enthusiasm, critical thinking, etc.

c. Teacher **Perceptions** – The attitudes, values, and belief systems that lie beneath teacher behaviors and teacher characteristics, such as self-concept, seeing students as able, a people v. thing orientation, etc.

A widely accepted singular definition of teacher dispositions does not exist in the literature, which makes it challenging to explicitly teach and develop shared dispositions among teacher candidates (Rose, 2013; Welch et al., 2010). Rose (2013) discovered that many institutions of higher education (IHEs) develop and promote dispositions based on their conceptual framework and employ strategies to explicitly teach them. Dispositions are often addressed within coursework and field experiences, and through methods such as the use of direct instruction and discussion about the program's conceptual model, modeling by faculty with discussion, and writing about dispositions through journaling and responses to instructor feedback (Cummins & Asempapa, 2013; Mueller & Hindin, 2011; Rose, 2013). Developing an entry level teacher's dispositions is a high-stakes issue as dispositions exhibited at the completion of a teacher preparation program will be maintained without change during the first years of teaching and will impact one's confidence and ability to succeed (Bauer & Thornton, 2013; Jamil et al., 2012). Nonetheless, the lack of a cohesive definition of dispositions impedes assessment and development of shared dispositions among all teacher education programs in institutions of higher education (Welch et al., 2010).

Assessment of Dispositions

Researchers have proposed and studied various methods for assessing educator dispositions. For example, the five step DAATS model (i.e., disposition assessments aligned with teacher standards) is a standards-based approach to assessing pre-service and in-service teacher dispositions that was proposed by Wilkerson and Lang (2007). This methodical approach is similar to Schussler et al.'s (2010) three-part framework for examining essential teacher candidate dispositions where the three key domains of intellectual, cultural, and moral competencies are used as anchors for candidates' self-assessments. In a study of dispositional assessments administered within teacher preparation or field-based settings, Jung and Rhodes (2008) findings showed there were multiple meanings of the assessments and they were used for a variety of purposes. Teaching, assessing, and evaluating dispositional aspects of teaching is substantially more difficult than assessing standards-based skills with simple rubrics or checklists and a narrow focus of teacher candidate assessment is often utilized rather than a complex system of addressing dispositions (Bauer & Thornton, 2013; Sherman, 2006). Further complicating the valid measurement of dispositions is that instruments, disposition surveys, fieldwork observations, and portfolio assessments generally present a limited view of candidate competence rather than a holistic view of a new teacher's ability (Henry et al., 2013). Others have noted the problematic nature in attending to dispositions discretely versus developing and assessing dispositions in tandem to avoid creating a false sense of separation between knowledge, skills, and dispositions (Osguthorpe, 2013).

Using Wasicsko et al.'s (2004) domains to categorize findings, Ellis et al. (2009) surveyed 234 US NCATE accredited teacher prep programs to discover how candidate dispositions were assessed. IHE respondents were asked to list their dispositions and responses were categorized into the three domains. Results per institution indicated that teacher characteristics were the primary domain of interest (average of 4.3 dispositions per institution), followed by teacher perceptions (average of 2.8 per institution), and lastly, teacher behaviors (average of 1.9 per institution). Researchers of a more recent study related to teacher education compared perceptions of faculty and teacher candidates on dispositions using an assessment instrument created around the IHE program's conceptual framework (Conderman & Walker, 2015). Dispositions on the assessment instrument were operationalized under the categories of caring, collaboration, creative and critical thinking, lifelong learning and scholarship, and diversity. Results indicated overlap in three of the five dispositional areas of concern. For example, both faculty and candidates had agreement in the areas of caring in terms of candidates submitting assignments on time and attendance and punctuality.

Dispositions for Inclusive and Special Education Contexts

Specific teacher dispositions are a critical factor in the field of inclusive and special education. In terms of building strong partnerships with families, dispositions such as a shift from a deficit lens to a strength-based lens is needed when working with diverse and non-traditional families, as well as valuing families as contributing members of a collaborative educational team that possess valuable knowledge of their child's strengths, challenges, and opportunities for growth (Amatea et al., 2013). In McCall et al.'s (2013) review of literature on special education teacher candidate assessments, attitudes about disability, attitudes about inclusion, and attitudes about students from diverse backgrounds with exceptionalities were examined in multiple studies, thus underscoring the value of strengths-based perceptions about disability. Beginning teacher

candidates may have existing beliefs about hallmarks of special education such as inclusion, equity, individualizing instruction, and collaboration, while they may grow in their development of advocacy skills and expertise in adapting instruction with more experience (Le Page et al., 2008). Additionally, special education teacher candidates perceive higher comfort levels in working with students with disabilities after direct field experiences with students with disabilities (Reeves et al., 2019). In terms of working with paraprofessionals, both in-service special education teachers and paraeducators reported that effective special education teachers must demonstrate dispositional competencies such as open-mindedness, being respectful, and being personable (Biggs et al., 2019). Undoubtedly, collaborative communication skills are at the forefront of a special education teacher's professional responsibilities (Biggs et al., 2019; LePage et al., 2008; Whitby et al., 2013).

Method

We employed a mixed-methods design using inductive content analysis procedures that were performed on published standards and guiding principles documents related to education and educator preparation for inclusive and special education. Content analysis is a method for analyzing text data that dates back to the 18th century and has been used extensively in the social sciences (Hsieh & Shannon, 2005; Krippendorff, 2019). Strengths of content analysis are that it yields inferences from various kinds of texts including visual, verbal, symbolic, and communication data and it can be used in both quantitative and qualitative designs (Krippendorf, 2019). The researchers applied Krippendorff's (2019) definition, "Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (p. 24). As we were interested in comparing similar phenomena (i.e., dispositions) inferred from different texts, our design followed Krippendorff's (2019) model in order to draw distinctions from the organizational documents and apply the same content analysis procedure to each individual standard. We further explored differences among the inferences we drew from the text (e.g., standards) based on the defined coding criteria we developed to analyze the data.

Our first step followed the summative qualitative content analysis procedure described by Hsieh and Shannon (2005). In a summative approach to qualitative content analysis, keywords are drawn from existing literature to examine the data. We used keywords of characteristics, behavior, and perceptions to analyze individual standards one by one. It is assumed that content analysts have an ability to read and interpret texts as well as a cursory knowledge of their sources (Krippendorff, 2019). This ability allows for greater trustworthiness of the findings. Both researchers have leadership positions in teacher preparation programs and have over 50 years of combined expertise in the field of inclusive and special education in k-12. We are also active members of multiple professional organizations related to teacher preparation and inclusive and special education.

Procedures

Phase one. To compile our content source list, we began by drawing from our combined expertise and familiarity with leading organizations, accreditation agencies, and technical assistance centers related to pre-service or in-service teacher preparation or teaching. We defined

"leading" organizations as those with large international and multi-state membership. We created a preliminary table listing each professional organization or accreditation agency using a snowball technique. We listed each standard, principle, or ethical position statement related to teacher dispositions as written in the document. We added additional relevant sources by researching citations on the published document or other references on the website so that our list was as comprehensive and exhaustive as possible. The initial list of organizations or accreditation agencies included 12. We then created inclusion criterion to further sift through the initial list. Only those organizations that met all three criteria were included in the final source analysis, which totaled seven. Our final inclusion criteria were as follows: (a) the organization must be affiliated with inclusive and special education teacher preparation, and (b) the organization must have published documents or standards related to teacher preparation and dispositions and/or ethics for inclusive and special education. We operated under the assumption that unless otherwise specified in the standards, the standards were aimed at competencies for teaching *all* students, including students with disabilities. However, exclusions were made for statements within the documents that were related to administrator preparation and those aimed at policy changes or recommendations for state level practices that did not explicitly address individual teacher agency.

Phase two. We employed a deductive process to code each statement or standard on our final source list by using Wasicsko et al.'s (2004) categories: teacher behaviors, teacher characteristics, and teacher perceptions. A master source table was created with each of the individual standards, principles and/or statements from the published documents. To arrive at valid and reliable results, the master source table was copied and coded separately by each researcher into the three categories. Preliminary coding results were recorded back on to the master source table and inter-rater reliability scores were calculated in two ways. First, general levels of agreement for each standard or statement was calculating using a percent agreement of number of agreements divided by number of possible agreements. Next, Cohen's Kappa (κ) was calculated to measure agreement attributed to chance compared to maximum possible beyond chance agreements (Conger, 2017).

Phase three. Our final phase was an iterative qualitative process that involved in vivo coding to unpack minor and major themes from the standards and principles. As a first step, we began with individual words as the unit of analysis and generated a frequency count of the terms implying a characteristic, behavior, or perception if cited at least seven times or more in the individual standards and/or statements. We used the threshold of a minimum of seven occurrences for the word to be included and justified that rationale by assuming that the authors of the standards/statements used the word intentionally to represent the organization's position. We complemented this qualitative analysis process by inferencing minor themes and major themes from each individual standard/statement (Creswell & Guetterman, 2019). Each researcher coded minor themes separately by deriving them line by line from our original coding tables. Once complete, each researcher provided her input regarding minor themes into a joint master coding table and met to discuss and validate our combined data. We identified minor themes where both researchers were in agreement until saturation of the minor themes was reached. We also used an in vivo coding approach to arrive at the major themes. As an added content validity step, we returned to the initial frequency count to ensure each major theme captured the essence of the minor themes it represented.

Results

Organizations

Seven professional organizations/accrediting bodies met all three inclusion criteria. The professional organizations were: (a) Association for the Accreditation of Colleges of Teacher Education (AACTE), (b) Council for Exceptional Children (CEC), (c) Collaboration for Effective Educator Development, Accountability and Reform (CEEDAR), (d) Council of Chief State School Officers (CCSSO) (e) National Association of State Directors of Teacher Education, (f) Teacher Education Accreditation Council (TEAC) and, (g) TASH.

Agreement on Dispositions by Organization

A total of 185 individual standards and principles were examined across the seven professional organizations/accrediting bodies. Individual standards and/or principals examined for each organization ranged from 4-44. Total percentage agreements on disposition categories by organization ranged from 50% - 100%. Average percent agreement across all items examined was 78%. Researchers were in total agreement of 100% for the categories evident within the standards and/or guiding principle documents of TASH and AACTE. Two agencies were in the 80% range (NASDTE and CCSO/CEEDAR) and one was at 75% (TEAC). The lowest levels of agreement in the 50% range were for CEC's Ethical Principles and Professional Practice Standards for Special Educators and the CCSO's Model Core Teaching Standards. Both researchers coded characteristics as the most frequently occurring disposition among organizations at 50% or more of the standards, followed by dispositions defined as behaviors among agencies at 34% of standards reviewed, and dispositions defined as perceptions were the least frequently occurring among agencies at 15% or less of standards reviewed. Results are presented in Table 1.

Table 1
Coding of Guiding Principles & Standards According to Disposition Categories: Behaviors, Characteristics, & Perceptions

		Behavior		Characteristic		Perception		
Organization/Agency	Total Standards/ Principles	R1	R2	R1	R2	R1	R2	Total Agreements
TASH Resolution on Teacher Education	10	6	6	4	4	0	0	100%
CEC Ethical Principles & Professional Practice Standards for Special Educators	12	1	5	9	5	2	2	50%
AACTE Guiding Considerations for Special & Inclusive	2	0	0	1	1	1	1	100%

Education								
NASDTE Model Code of Ethics for Educators	86	29	23	51	58	6	5	84%
CCSSO Model Core Teaching Standards	44	9	7	14	26	20	11	59.09%
CCSO & CEEDAR Licensure & Performance Assessment Policy Action Statements	27	16	18	11	9	0	0	88.89%
TEAC Principles & Standards for Teacher Education Programs	4	1	2	3	2	0	0	75%
Totals	185	62	61	93	105	29	19	

Note. R1=Researcher One; R2=Researcher Two; *=Total Number of Disagreements/Number of Agreement

Cohen's kappa coefficients ranged from moderate (.41-.60) to almost perfect (.81-1.0). Kappa coefficients ranging from lowest to highest were as follows: CEC (κ =.48: moderate*);* CCSO's Model Core Teaching Standards (κ =.60: moderate); TEAC (κ =.69: substantial); CCSO's Model Code of Ethics (κ =.83: almost perfect); CCSO & CEEDAR (κ =.85: almost perfect); AACTE *(*κ =1.0: almost perfect); and TASH (κ =1.0: almost perfect).

Major Themes

Eight major themes emerged from the data: (a) professional; (b) lawful; (c) respects diversity; (d) ethical; (e) collaborative; (f) communicative; (g) advocate; (h) outcomes-oriented. Each theme is unpacked below.

Professional. A major emphasis among the organizations was related to exercising professional judgement and decision-making as well as professional and ethical behavior toward students, parents, colleagues, and the profession at large. Prevalent also within this theme was the ability to teach effectively in a caring way and set and maintain appropriate professional boundaries.

Lawful. The concept of acting as a "lawful" educator was captured by examination of similar intent of many standards. The term was chosen during the theming process due to the variety of capacities in which teachers exhibit their commitment to being "lawful" including adherence to the many facets of acting legally. Upholding lawful practices in regard to case management, confidentiality, use of technology, and procedural requirements of a special educator were prevalent behaviors that emerged through analysis. Also prevalent was a commitment to protect student safety. Aspects of student safety included providing safe physical and virtual environments for learning. A focus on mental, emotional, and psychological health of students served in learning environments were additional capacities noted. Establishing appropriate boundaries with students and families in accordance with the law and professional judgement were additional evident behaviors.

Respects diversity. Another theme that was prevalent across the organizations' standards was the need for educators to be respectful. This emerged in standards referring to diversity awareness, cultural sensitivity, and collaboration and communication with a variety of stakeholders, especially families. In terms of working with diverse students and families, references to respecting dignity, worth, and uniqueness of individuals as well as beliefs of families was noted as well as the need for teachers to learn multicultural perspectives. References to conflict resolution skills were noted several times and self-awareness was also implied by several standards pertaining to respect.

Ethical. Ethical behavior, while difficult to assess as a disposition, appeared 16 times within standards examined. Ethical legal behavior was prevalent as a subtheme. Setting and maintaining ethical boundaries with students, colleagues, and communities was a valued disposition present in standards. The dispositions of confidentiality, responsibility, and trustworthiness were also evident as valuable. Ethical behavior in regard to technology use was present as theme within this category and surfaced numerous times within standards from NASDTE.

Collaborative. Collaboration was a clearly delineated theme across organizational standards examined. Collaboration in regard to inclusion of diverse stakeholders in the educational process, supporting the educational community's vision, and educational planning was evident. Collaboration skills in terms of collegial activities and valuing the contributions of students and families for learner development was repeatedly evident. Collaborative dispositions including the value or ability to engage in effective communication, conflict resolution, and relational abilities were woven throughout multiple standards.

Communicative. Educators who are respectful and thoughtful communicators was another major dispositional theme that was supported throughout several organizations. Being able to communicate with a variety of stakeholders, with attention to families, parents/guardians and colleagues, was stressed by several organizations.

Advocate. Advocacy for students was emphasized numerous times by several agencies in terms of their privacy rights, their well-being, and their general success. Advocacy for parents/guardians and families was also a recurring aspect among the standards. In addition, educators who advocate for equitable resources, safe environments, and schools was stressed as well as advocacy for the profession at large.

Outcomes-oriented. Outcomes-oriented was the final major theme emerging from the data. Dispositions related to providing individualized instruction emerged frequently as did the value of reflective practice, active inquiry, and maintaining high expectations for children. Active participation in professional organizations, professional research, and an aptitude toward professional growth, along with implementation of best practices in the classroom, were common descriptions alluding to outcomes-oriented educators. Many of the organizations' standards specified the importance of exploring bias and ensuring instructional decisions are focused on strengths as a basis for growth of learner. An emphasis on assessment-driven and data-driven instructional decisions based on the individual child was noted throughout. There was additional

emphasis on aligning instruction and assessment with individual learning goals, with attention to students' personal and social needs, as well as values, beliefs, and cultural backgrounds.

Discussion

This study adds to the literature on dispositions for pre-service inclusive and special education teachers. Our findings support previous research findings that while there is still a lack of consensus on a widely held definition of dispositions (Rose, 2013), essential dispositions can be organized according to broader domains (Sockett, 2009; Schussler et al., 2010). We were in almost perfect agreement with the way four organizations categorized teacher dispositions in terms of behaviors, characteristics, and perceptions (e.g., CCSSO, CCSSO & CEEDAR, AACTE, and TASH), which is promising given the influence on teacher preparation and reach of these organizations and that fact that CCSSO's document represented a Model Code of Ethics for Educators. This finding is also promising given that the CCSSO's Model Code of Ethics for Educators document and the CCSSO & CEEDAR's Promises to Keep documents are two of the three lengthiest and most robust documents examined. Our research findings also support a similar phenomenon that IHEs predominantly define disposition in terms of characteristics (Ellis et al., 2009).

Teasing out distinct dispositions was a complex task and there was overlap among many dispositional definitions. We wondered if the wording of the standard captured dispositional characteristics, behaviors, and perceptions effectively because there were times when justifications could be made for the statement representing more than one distinct disposition. It is also interesting that our lowest level of agreement was in response to the CEC's Ethical Principles & Professional Practice Standards for Special Educators. While both researchers are professionally connected with the CEC, we discovered that our individual coding responses varied due to minimal amount of observable and measurable components of the standard. Ambiguity of the language used to describe perceptions was evident as compared to behaviors and characteristics, which we deemed as more objectively described.

Strengths & Limitations

Strengths. Several strengths were present within this study and research process. The researchers reviewed and analyzed a wide breadth of standards and principles representing leading organizations and agencies in the field. We discovered strong inter-rater reliability ranging from almost prefect to substantial for five of the eight organizations. The research study was conducted by a seasoned research team with extensive experience in the field of special education. We possess professional expertise observing and evaluating pre-service and in-service teachers allowing for meaningful interpretation of the data (Krippendorff, 2019). The research team was also representative of different educational contexts and perspectives on teacher education as representatives of both public and private IHEs.

Limitations. As noted in extant dispositional research, the construct of dispositions remains nuanced and multifaceted (Schussler et al. 2010; Sockett, 2009). In our examination of the standards and principles, we discovered that some standards were written as ideals indicating what teachers "should do", while others were more directive and identified what teachers

"should not" do. We found ourselves grappling with inferring a precise behavior, characteristic, or perception disposition because there was much overlap within the standards/principles themselves. This overlap alludes to the caution raised by Osguthorpe (2013) in attending to dispositions discretely and the false separation between knowledge, skills, and dispositions that is created. We also discovered nuance throughout the standards and principles in terms of the length of the statements written and in terms of the emphasis of the standards/principles being mission specific to the organization (i.e., overtly focused on technology or cultural sensitivity). Thus, levels of agreement were not at 80% or better for all standards examined. We excluded organizational standards/principles that did not meet our inclusion criteria, even though they may inadvertently address educator dispositions as defined by Wasicsko et al. (2004). Again, this conundrum illustrates the complexity of the construct.

Recommendations

Recommendations for both research and practice are warranted. Future research is recommended to replicate this study with additional researchers to compare inter-rater reliability scores against the scores of our analysis to examine consistencies and discrepancies. It is also recommended that leading inclusive and special education organizations and accrediting agencies engage in consensus-building conversations about a shared definition of dispositions essential for pre- and in-service teachers in *all* contexts. Additional research could investigate standard disposition assessments available to teacher preparation programs for alignment to our findings. Discovering alignment of existing IHE disposition rubrics to the eight key dispositions of professional, respects diversity, ethical, collaborative, communicative, advocate, lawful, and outcomes-oriented would further add to the literature base. It is recommended that these findings prompt professional organizations to evaluate the alignment of their published standards or principles to those of other flagship organizations.

Conclusion

Clearly delineated and research-supported dispositions associated with teaching *all* students will benefit the profession if teacher candidates develop and grow desired dispositions through ongoing self-assessment of the behaviors, characteristics, and perceptions exhibited by effective teachers in today's schools. Teacher preparation program faculty with philosophical differences may continue to grapple with the intricacies of measuring dispositions. Yet, as Wilkerson and Lang (2007) poignantly assert, "If we do not attempt to project whether the skill will continue to be applied in the 'real-world', after teachers graduate from their college preparation or district-based preparation programs, then we have partially failed in our obligation to produce high quality teachers" (p. 3). We affirm their assertion and advocate for dispositional assessments that coalesce among essential standards-based dispositions representative of the field at large--professional, lawful, respects diversity, ethical, collaborative, communicative, advocate and outcomes-oriented.

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About the Authors

Joanne M. Van Boxtel, Ph.D., is the Associate Professor and Faculty Director for Special Education in the School of Education at Vanguard University. She obtained her doctorate degree in Education, with an emphasis in Disability Studies, from Chapman University. Her research interests include teacher education and special education, international inclusive education, and Universal Design for Learning (UDL).

Megan Chaney, Ed.D., is an Associate Professor and the Division Chair of Special Education at Fresno Pacific University. She obtained her doctoral degree in Education from Walden University. Her research interests include teacher education and special education, teacher dispositions, and administrative leadership for inclusion.

Comparing Preservice and Inservice Teachers' Perceptions and Actual Knowledge of Phonics

Cheryl Wold, Ph.D.
Northern State University

Andria L. Moon, Ed.D.
St. Norbert College

Alan L. Neville, Ed.D.
Presentation College

Tim Houge, Ed.D.
Northern State University

Abstract

Literacy instruction is an important component of educator preparation programs. Since many students are identified as having learning disabilities in reading, it is important that all teachers are knowledgeable and have proficient phonics skills. Recent research has indicated that many teachers are lacking the skills necessary for appropriate literacy instruction. This study examined college students', general education teachers', and special education teachers' perceptions of their teaching ability and actual knowledge of phonics. A survey was used to gather information that was analyzed for statistical purposes using a one-way analysis of variance to compare all three groups, and significant differences were found among special educators, general educators, and college students.

Keywords: special education, teacher learning, instructional practice, phonics, literacy instruction

Comparing Preservice and Inservice Teachers' Perceptions and Actual Knowledge of Phonics

Reading is vital to the success of all students. It is important that college students and teachers in the field be prepared to teach diverse learners to become proficient readers. However, reading is a very complex process and involves many components. Reading is a cognitive interaction with an already existing text. That interaction is driven by engaging a reconstruction of the orthographic structures by which meaning is represented in that text (Ramsden & Mira, 2008). Phonics—pronunciation and blending of the phonemes in words of a language a child already knows and understands—is one aspect of that contributes to the whole of reading. This study focuses on one component of reading – phonics. To be an effective reading teacher, whether a general education or special education teacher, one must have knowledge of words, their origin, meaning and construction, and must also have an understanding of the phonological, orthographic and morphographic principles and rules that govern English reading and spelling. Referencing Cunningham et al. (2009), Driver et al. (2014) stated,

> teachers who were more knowledgeable about phonics preferred to spend approximately three times as much time on instruction focused on letters and sounds, while teachers

> who were less knowledgeable about phonics preferred to spend more of their time on literature activities (p. 311).

In particular, it is important that all teachers recognize and articulate the various strategies that children can use when faced with reading and spelling unfamiliar words. Left to discover phonetic principles merely through incidental learning, children falter, whereas orthographic instruction done explicitly, systematically, and early leads to children successfully handling printed vocabulary (Mesmer & Griffith, 2006). Leko (2015) cited the National Center for Education Statistics (2011):

> First, the poor reading achievement of students with disabilities has been and continues to be a pernicious and long-standing dilemma as the most recent data indicate that 68% of fourth graders and 62% of eight graders with disabilities read below a basic level (p. 187).

In short, teachers must have an understanding of the difference between phonics, a way of teaching reading, phonetics, the study of speech production, and phonemics, the study of how sounds function to express differences in meaning. A child's spoken language is a fully integrated, well-functioning system. The written language they must ultimately read is also systematic. Teachers must try to understand both these systems, for their task is one of helping children connect them. Phonics should provide a systematic way of relating the two systems. Thus, basic insights from linguistics can be of use to teachers who use phonics as a way of teaching reading. A student's ability to decode phonemically regular words correlates with their teacher's knowledge of phonics (Driver, 2014).

In today's multifaceted classrooms, providing intense language-based literacy instruction for students of all ages is an important part of instruction and interventions (McCutchen, Green, Abbott, & Sanders, 2009). One means of assuring this type of instruction occurs is through deliberate linguistic instruction delivered at university departments of teacher practice (Bos, Mather, Dickson, Podhajski, & Chard, 2001; Moats, 1995; 1999; Spear-Swerlin, & Brucker, 2003). Driver, Pullen, Kennedy, Williams, and Ely (2014) noted that "Upon completion of their respective preparatory programs, preservice teachers enter the profession with varying levels of readiness to teach in increasingly complex and diverse school environments" (p. 309). Brownell, et al. (2014) found that when provided extensive professional development in the areas of decoding and fluency, teachers are able to change their literacy teaching skills in a way that positively affects students' achievement in reading.

This correlation between teachers' knowledge of phonics and student reading achievement is an important area for further investigation especially in a state that has a high rural population such as the one in this research study. Rural communities face educational issues such as poverty, low educational revenue, and lack of high-quality preschools (Lester, 2012). It is of utmost importance that teachers in rural communities are prepared and trained in effective literacy practices. Thus, our study examined the phonics knowledge of special education and general education teachers as compared to college students in a Midwestern state with 127 of the 151 school districts being classified as rural. The researchers hypothesized that the college students would score higher than teachers in the field because they were currently enrolled in reading

methods courses at the time of study. This study includes a summary of the type of phonics assessment tool used, and a commentary on the effects of phonics instruction at an educator preparation program, and the need for this type of instruction to assure full preparation of teachers upon their first year of teaching.

English Phonics. There has always been a close relationship between reading and phonics. From a historical perspective, as new evidence of spelling instructional importance emerged, new forms of literacy instruction were constructed to support them (Adams, 1990; Byrne, & Fielding-Barnsley, 1990; Moats, 2000). This same pattern holds true for one of today's most influential literacy instructional features: teacher's phonics expertise. Literacy scholars such as Ehri (2014), are finding that information and communication of the orthographical components of English exert the most powerful consequences for how we define and understand literacy and literacy instruction. In particular, students with learning difficulties benefit greatly from direct instruction that helps them understand and apply the principles underpinning the construction of words in the English language. According to Hattie (2009) comprehensive interventions for students with learning disabilities that include reading instruction that emphasizes correct word recognition, decoding, and letter awareness, had a much higher effect than other approaches for reading instruction. Forness, Kavale, Blum, and Lloyd (1997) stated, "Nonetheless, we may conclude from these studies that some interventions or procedures, such as formative evaluation and direct instruction, are relatively well-established as effective and should be encouraged in practice" (p. 8).

Teaching children the English phonics requires direct instruction on how to accomplish this recoding to sound. In other words, English phonics instruction teaches children how letters represent the sounds of words in our language. Unfortunately, research has not consistently demonstrated that every teacher is aware of the phonetic components, which are necessary for teaching others how to effectively read and spell. Bos, Mather, Dickson, Podhajski, and Chard (2001) in a study of 252 preservice educators and 286 in-service educators discovered that over 50% of them were ignorant of even basic principles of word structures, such as the number of phonemes contained in a word like 'grass,' or the second sound in the word 'queen.' A similar lack of knowledge, related to syllables and basic phonics, was revealed in a study of college students in Australia (Meehan & Hammond, 2006). Finally, the Teaching and Learning Research Project (2006) discovered that teachers were rarely aware of the basic morphology's importance, and often lacked any depth of understanding in that domain.

Without this awareness, teachers are apt to foster ineffective strategies such as guessing, (e.g. what word do you think would make sense here?), skipping, (e.g. skip that word and go on to the end of the sentence), dependence rather than independence, (e.g. I'll say the sounds and then the word. Now you do it.) or simple memorization of high frequency words through the use of spelling tests, flashcards, and word walls. In addition, teachers may fail to identify orthographical weaknesses, determine the orthographic instructional needs of weaker readers, and tailor their teaching to meet those needs, all of which can cause difficulties to students who are learning to read. Many students who are struggling with literacy are identified as having a learning disability in reading. More than 90% of students identified with a Specific Learning Disability before fifth grade were identified primarily because of reading difficulties (Denton, Vaughn, & Fletcher, 2003).

In an effort to determine whether teachers were receiving English phonics instruction at universities that train teachers, Binks-Cantrell, Washburn, Joshi, and Hougan (2012) completed a study with surprising results when university faculty members' responses were matched to those of their students on a survey of language and reading insight. The rates of correct responses were shockingly low among the university faculty who were responsible for teaching teachers how to teach reading. For example, 29% knew that <frogs> has two morphemes, and 26% knew that <observer> has three morphemes. A mere 58% was familiar with the correct definition of phoneme awareness from multiple choice items. A majority confused it with phonics. Sixty-five percent recognized that <napkin> has two closed syllables. As might be expected, student teachers scored lower than their professors on every item of the survey. In another study, Rickenbrode and Walsh (2013) selected 1,130 institutions-representing 99 percent of teachers annually. Found that only 18% of these institutions addressed all five of the essential reading components. "In other words, a program that addresses three of the five components isn't "60 percent" as good as one that teaches all five; it's actually completely inadequate" (Rickenbrode & Walsh, 2013, p.34). While proper instruction has not always occurred at the educator preparation programs, Brady, et al. (2009) challenged the conventional belief that exposure through classroom curriculums would make up for the lack of language instruction at universities. Their survey of first grade teachers reported that experienced teachers came into their study knowing no more about reading and language than novice teachers. This finding suggests that teachers do not learn the elements of our linguistically predictable language just from being exposed to reading programs or from spending years in the classroom. "Surveys of U.S. teachers have consistently shown that nearly all their instructional time is structured around textbooks or other commercially produced materials, even though teachers vary substantially in the extent to which they follow a book's organization and suggested activities" (NRC, 2001, p. 36). While adherence to curriculum is meant to help students achieve higher test scores, national results show that this emphasis is not working (Eisner, 2002). Teachers' knowledge of phonics, therefore, is necessary for the selection and implementation of effective reading instruction. Merely following the curriculum may not always be enough for some students.

Recently the National Council on Teacher Quality reported that progress on the science of reading instruction in teacher preparation with 51 percent of 1,000 evaluated traditional elementary teacher preparation programs earning an A or B grade for their coverage of the key components of the science of reading—up from just 35 percent seven years ago (Drake & Walsh, 2020).

In summary, results from research have supported the view that students make the most progress in reading and spelling when they are explicitly taught effective strategies for working out how words are constructed (Hougen & Smartt, 2012). Intervention from teachers with strong phonics knowledge helps students understand the phonological and morphological principles that underpin English spelling and should aim to recognize the connection between sound units and letter groups. To deliver reading instruction effectively and respond appropriately to student errors, teachers need a deep knowledge and understanding of the language, including PA [phonological awareness]" (Driver, 2014, p. 311).

Purpose and Research Questions

Increasingly, literacy instruction has become an important issue for all teachers. In schools, teachers are devoting more time to teaching reading each day, but achievement results do not reflect an increase in reading achievement scores, especially for students with disabilities. Klehm (2014) noted,

> It has been widely reported for several years that there are large achievement gaps between the achievement of SWD [students with disabilities] and SWOD [students without disabilities]…It appears that after many years of inclusive programming for SWD, many students are not making the progress that is necessary to meet proficiency. (See Chudowsky, Chudowsky, & Keber, 2009; Harr-Robins et al., 2012)

Lack of reading achievement is especially alarming for students with disabilities who face greater challenges in improving their phonics skills. In rural areas the shortage of highly qualified special education teachers sometimes prevents students with disabilities from receiving the daily intensive intervention that they need. We are aware that the challenges are great, including placing highly qualified teachers in rural schools, but the importance of the goal of excellent teaching for all children makes it worth the effort. Furthermore, this state faces significant challenges when providing special education services. “The national shortage of special education teachers may be the most serious problem facing special education today.” (Marshall et al., 2013, p. 127). To help alleviate teacher shortages, ESSA has amended the highly qualified requirement of NCLB and as a result rural states are allowing alternate routes for teacher certification in special education (Sindelar et al., 2018). As a result, it becomes necessary for all teachers to have essential phonics skills in order to effectively teach all students. The purpose of this study was to identify the content knowledge of phonics of various groups of teachers along with their perceptions of their ability to teach reading. For the purpose of this study, the following descriptive and comparison questions were used to survey special education and general education teachers as well as preservice teachers in rural districts:

1. Are there significant differences in phonics knowledge by: position; primary instruction level; literacy major; and years of experience?
2. Are there differences in self-perceptions of teaching reading to typically developing readers and struggling readers?
3. Are there differences in their self-perceptions of their ability to teach phonics?
4. Are there differences between the knowledge of phonics content between college students and those teachers already practicing in the field?
5. Are there differences between the self-perceptions of the ability versus the actual knowledge of phonics content?

Methods

The participants in this study were general education teachers, special education teachers, and college students who were taking upper-level literacy courses. All college students from this Midwestern four-year public university had completed a three-credit reading methodology course. General education and special education teachers in the same rural state had been

teaching for a minimum of three years. The majority of teachers and college students who participated in this study teach, or will conduct a field experience in, a rural community. Butler-Flora and Flora (2004) identified a place designation of rural as "open countryside or towns of less than 2,500 outside urbanized areas" (p.5). In fact, the state used in this research study is rural with only three cities listed as urban. In 2010, the state had a population per square mile of 10.7% (U.S. Census, 2019). Agriculture comprises the largest industry in the state (State Department of Tourism, 2019). The survey was adopted and adapted from Binks-Cantrell (2012). After careful analysis, a select number of questions were chosen from the original survey. Previous administration of the survey by Binks-Cantrell (2012) covered a demographic scope consistent with the demographics of the current study. Given this previous publication of the results of this same instrument would support internal consistency, reliability and criterion validity. The survey consisted of three sections: demographics, phonics content, and perceptions of teaching skills related to reading. Seven teacher demographic items, related to current teaching position, level of instruction, literacy major/minor, years of teaching experience, university attended, and degree earned were used.

A Likert scale was used for the section of the survey related to perceptions. Respondents answered questions for each dimension by rating the items on a scale of 1 to 5, with 1 indicating (not at all) and 5 indicating (expert). The survey was sent via the state Department of Education e-mail listings to 425 general educators who have responsibility for literacy instruction. The special education listserv includes 995 participants who registered including special education teachers, university professors, school administrators, and parents. The survey was sent via university course management software to 46 college students in upper-level literacy courses. A reminder to complete the survey was sent one month later. All surveys were completed electronically.

Data Collection and Analysis

The survey was completed by 38 college students (response rate 83%), 47 general education teachers (response rate 11%), 70 special education teachers (response rate 7%), and three reading specialists for a total of 158 respondents. In order to clean the data prior to analysis, the raw data were first accessed and inspected in Microsoft Excel. The variables containing 'blank' values were filtered for in Excel. The following variables were found to contain 'blank' field values Q6, Q7, Q8, & Q14. Cases containing these blank field values were removed, leaving N=158 complete cases of data. Data were imported into SPSS. Frequency counts were run to inspect numerical frequency counts of all variables, and to cross-validate the N=158 number of complete cases of data. Descriptive statistics were run to inspect the data for 'reasonable' means and standard deviations, and again to cross-validate the N=158 complete cases of data. The three reading specialists were excluded from the analysis for a total of 155 respondents which equates to a 10% response rate for general educators. The participants self-identified as either a general education teacher, special education teacher, or college student. One-Way Analysis of Variance (ANOVA) was used to compare all three groups; two-tailed t-tests were used for individual group contrasts.

Data Coding

The survey questions 8 – 10 were totaled to create a dependent variable (DV) called perception. This variable was a subjective participant self-rating. Total points possible score for the DV

perception = 15. The instrument used was a 5-point Likert-type scale (1 = not at all, 2 = minimal, 3 = moderate, 4 = very good, and 5 = expert). A score of 15 would reflect the highest subjective self-rated level of perceived ability. The survey questions 11 – 20 correct answers were totaled to create a dependent variable called *total knowledge score* by participants on these questions. Total points possible on the DV called score = 10. A score of 10 would reflect the highest level of knowledge on these questions. A valid case was defined as a case of data where all questions 8 – 20 were completed, and where all demographic data was present.

Data Normality Issue

Upon assessing the data for normality, it was determined that the dependent variables (DV) representing perceived knowledge (perception) and actual knowledge (score) were not normally distributed, with each reflecting a negative skewness. A Kolmogorov-Smirnov Normality Test (for large sample sizes) for both dependent variables yielded statistical significance values of $p < .001$ indicating rejection of the null hypothesis that these data do not differ significantly from a normal distribution. However, visual inspection of normality plots indicates that normality is present to a high degree, but that the presence of modal statistics greater than the mean within each variable is a reasonable explanation for this negatively skewed departure from normality.

According to Burdenski (2000), a skewness departure from normality is acceptable in general if that departure is contained within a ± 1.0 range of skewness. Skewness for the DV score was –.141, while skewness for the DV perception was -.321. In addition, samples larger than n=30, data have a tendency to be normally distributed—and ANOVA tends to be highly robust with respect to violation of the normality assumption (Burdenski, 2000). It is important to emphasize the following points as an explanation for the moderate normality departure seen within these data: Representation of groups within the data subset used for the analyses is unequal—College Students n=38, whereby the active experienced teacher groups of General Education n=47, and Special Education n=70. With active teachers having accumulated a number of years of experience, it is expected that those who are more experienced would demonstrate greater knowledge and thus would likely be more highly represented on the knowledge-score dependent variable called score.

Analysis of Covariance (ANCOVA) could have been utilized to hold the confounding variable years of experience constant while looking only at the measurable differences on the DV score. However, ANCOVA would require that the years of experience variable be an Interval or Ratio scale variable, and due to an observational design, the variable years of experience was collected as a categorical variable representing experience that falls within a specific range—thus eliminating ANCOVA as a potential tool to look at the DV score objectively absent the confounding variable. In addition, the ranges representing years of experience did not have equal interval widths across all ranges.

Testing and Verifying Data Normality

In order to confirm normality across the college student, general education, and special education groups, 19 cases were randomly selected from each of the general education and special education groups. The three groups were then tested for the assumption of normality using a Shapiro-Wilk test of normality in Statistical Package for the Social Sciences (SPSS)—the idea being that an equal n=38 cases of data derived from experienced and knowledgeable teachers versus n=38 inexperienced college students would result in data normality on the DV measuring

knowledge (score). The results of this test indicate no departure from normality for the DV score when college students and experienced knowledgeable teachers are represented by equal n (n=38), thus supporting that the unequal representation of the General Education and Special Education groups within the dataset is a primary contributing factor to the departure from data normality within the full-range analyses.

Results

The findings of the current study support previous research indicating that not every teacher was skilled in the components necessary to teach phonics. It should be noted that no groups approached the perfect content score of 10 for a mean score. Ten questions on the survey were related to phonics content (see Appendix).

Differences by Content

The demographic data were analyzed to describe the participants of the study. In total, there were 158 respondents. Of the 158 respondents there were 25 college students, 86 elementary teachers, 14 secondary teachers, nine middle school teachers, and 24 K-12 teachers. Only three teachers coded themselves as reading specialists, therefore, those cases were eliminated from the analysis, which left 155 respondents. Seventy respondents (45%) were special education teachers. Forty-seven general education teachers (30%) were the next highest level. Thirty-eight college students were the least in number (25%). There were statistically significant differences among students, general education teachers, and special education teachers in terms of their knowledge of phonics content. There was no statistically significant difference between the mean scores of general education and special education teachers. The mean score for college students was 4.31 while the mean score for both general education teachers and special education teachers was 5.87. The college students scored statistically significantly lower than both general education and special education teachers (see Table 1). This means that general education teachers and special education teachers have more knowledge of phonics as compared to college students.

Table 1
Contrast t-test comparisons for DV 'Score' by participant 'Position'

Comparison	n	t	df	Sig. (2-tailed)	Effect Size
Students vs. GenEd Teachers	38	-3.86*	152	0.000	.838
Students vs. Sped Teachers	47	-4.177*	152	0.000	.886
GenEd vs. Sped Teachers	70	0.003	152	0.998	
Total	155				

Note. Significant at the .05 level

The respondents were differentiated by primary instructional level in the following categories: college students, elementary, secondary, middle school, and K-12 teachers. The mean scores for college students was 4.40 while the mean score for elementary was 5.76, the mean score for

secondary was 5.86, the mean score for middle school was 5.11, and the mean score for K-12 was 5.83. When comparing groups in terms of level of instruction and content, there were statistically significant differences between college students and elementary teachers; between college students and secondary teachers; and between college students and K-12 teachers (see Table 2). This means the college students were not as knowledgeable in phonics as the elementary, secondary, and K-12 teachers.

Table 2
Contrast T-tests (two-tailed). 'Score' by 'Primary Instruction Level'.

Contrast Comparison	*T*	df	Sig. (2-tailed)	Effect Size
College Students vs Elementary	3.114*	153	.002	.702
College Students vs Secondary	2.278*	153	.024	.826
College Students vs Middle School	.955	153	.341	
College Students vs K12	2.617*	153	.010	.805
Elementary vs Secondary	.183	153	.855	
Elementary vs Middle School	-.960	153	.338	
Elementary vs K12	.175	153	.861	
Secondary vs Middle School	-.911	153	.364	
Secondary vs K12	-.037	153	.971	
Middle School vs K12	.964	153	.336	

Note. Significant at the .05 level. The Scheffe' Test [Post Hoc] This is a highly conservative Post-Hoc test that is used when unequal group N is present. We can see that the mean differences between groups are represented by a 95% confidence interval of the mean difference along with a significance statistic for the interval. Confidence intervals that contain a value of '0' indicate that no difference is indeed a possibility e.g. Lower= -2.7135 and Upper= .00019; the value '0' is within this interval---which means that zero difference between the two groups is a distinct possibility. Here we see that all confidence intervals under the rigor of the Scheffe' Test contain '0' as a part of the confidence interval. These confidence intervals generated by the conservative Scheffe' Test do not support the significance as found within the normal t-test comparisons for College Students vs. Elementary, College Students vs. Secondary, and College Students vs. K12. Overall conclusion for 1b-part1: Differences between groups are not significant on the DV called score with respect to conservative Post Hoc Scheffe' Test comparison. However, three of the group comparisons were indeed significant at the .05 level for the normal contrast t-tests as generated by the ANOVA.

When examining the results by literacy major there were no statistically significant differences on the content knowledge between those with literacy majors and those without. Those having a

literacy minor do not differ significantly from those without a literacy minor on the knowledge of phonics content. Having a degree or a minor in reading did not show any difference in phonics content compared to those without. There were no significant differences among the respondents with regard to type of college degree. In considering differences by the number of years of teaching experience, significant differences were found. There were differences among the groups, but only two, zero years of experience (mean 4.28) versus 11-20 (mean 6.09) years and zero years versus 31-40 (mean 7.11) years remained significant on the Post Hoc Scheffee' Test. Teachers with 11-20 years experience and those with 31-40 years experience were found to have more knowledge of phonics. There was no significant difference between general education teachers and special education teachers with respect to content knowledge of phonics.

Differences by Perception

In terms of perception of their ability to teach literacy, there were also statistically significant differences between teachers in the field and college students. The mean score for college students was 8.73 while the general education teachers' mean score was 10.57 and the special education teachers' mean score was 10.67. When comparing groups in terms of primary level of instruction and perception, there were statistically significant differences between college students and elementary teachers; between college students and middle school teachers; and between college students and K-12 teachers. The mean scores for college students was 8.76 while the elementary mean score was 10.37, the secondary mean score was 9.71, the mean score for middle school was 10.33, and the mean score for K-12 was 11.50. When examining the results by literacy major there were statistically significant differences related to perception between those with literacy majors and those without. The mean score for literacy majors was 11.29; however, they rated themselves higher than those without literacy majors with a mean score of 10.09. Those having a literacy minor do not differ significantly from those without a literacy minor on the perception of teaching phonics content.

In considering differences by the number of years of teaching experience and perceptions, statistically significant differences were found. There were differences among the groups, but only three, zero years (mean 8.73) versus 11-20 (mean 10.29) years, zero years versus 21-30 (11.60), and zero years versus 31-40 (mean 11.22) years remained significant on the Post Hoc Scheffee' Test. There was a significant difference between the elementary majors as compared to the double majors with elementary and special education degrees with the latter scoring higher. The mean score for elementary education was 9.85 while the mean score for special education was 9.88, the mean score for double majors of elementary and special education was 10.84. There was no significant difference between General Education teachers and Special Education teachers with respect to perception of ability to teach typically developing readers, struggling readers or phonics. There were significant differences on all comparisons of college students and in-the-field teachers with respect to perception of ability to teach typically developing readers, struggling readers, and phonics (see Tables 3 and 4).

Table 3

Contrast t-test comparisons for DV 'Perception' by participant 'Position'

Comparison	n	t	df	Sig. (2-tailed)	Effect Size

Students vs. GenEd Teachers	38	-4.544*	152	0.000	1.00
Students vs. Sped Teachers	47	-5.179*	152	0.000	1.13
GenEd vs. Sped Teachers	70	-.277	152	0.782	
Total	155				

Note. Significant at the .05 level. A t-test t-value is simply negative or positive due to which group values are being subtracted from the other groups' values when calculating the differences between group scores. E.g. Students vs. GenEd Teachers yields a negative t-statistic because as a group students scored lower on the DV called 'Perception' than did GenEd Teachers—subtracting larger numbers from smaller numbers yields negative results, and vice versa.

Table 4
Contrast T-tests (two-tailed). 'Perception' by 'Primary Instruction Level'.

Contrast Comparison	T	df	Sig. (2-tailed)	Effect Size
College Students vs Elementary	3.704*	153	.000	.874
College Students vs Secondary	1.492	153	.138	
College Students vs Middle School	2.113*	153	.036	.850
College Students vs K12	5.005*	153	.000	1.45
Elementary vs Secondary	-1.191	153	.235	
Elementary vs Middle School	-.058	153	.954	
Elementary vs K12	2.550*	153	.012	.576
Secondary vs Middle School	.756	153	.451	
Secondary vs K12	2.772*	153	.006	.910
Middle School vs K12	1.558	153	.121	

Note. Significant at the .05 level. The Scheffe' Test [Post Hoc] this is a highly conservative Post-Hoc test that is used when unequal group N is present. We can see that the mean differences between groups are represented by a 95% confidence interval of the 'mean difference' along with a significance statistic for the interval. Confidence Intervals that contain a value of '0' indicate that 'no difference' is indeed a possibility e.g. Lower= -2.9483 and Upper= 1.0398; the value '0' is within this interval---which means that "zero difference" between the two groups is a distinct possibility. Here we see that the majority of the confidence intervals under the rigor of

the Scheffe' Test contain '0' as a part of the confidence interval. Only 2 comparisons (College Students vs. Elementary and College Students vs. K12) are significant at the .05 level via the conservative Scheffe' Test; these comparisons consistently align with the ANOVA contrast comparison t-test results. OVERALL CONCLUSION for 1b-part2: Five of the group comparisons were indeed significant at the .05 level for the normal contrast t-tests as generated by the ANOVA; however, only two of these group comparisons (College Students vs. Elementary and College Students vs. K12) remain significant on the DV called 'Perception' with respect to a conservative Post Hoc Scheffe' Test.

Difference Between Perceived Ability and Actual Knowledge of Phonics

There was a statistically significant difference between perceived ability and actual knowledge of phonics skills. Perceived ability is higher than actual knowledge scores (see Tables 5, 6, and 7). Both dependent variables were compared as percentage scores of their total points possible for questions 8-10 and 11-20 respectively.

Table 5
Descriptive statistics.

Dependent variable	n	Mean	Std. Deviation
'Perception' (% value)	158	.6816	.13642
'Score' (% value)	158	.5525	.19604
Total	316		

Note. Method: Independent samples t-test. DV 'Score' (expressed as a % of total points possible) vs. DV 'Perception (expressed as a % of total points possible)

Table 6
Independent Samples t-test; DV 'Score' (expressed as a %) vs. DV 'Perception' (expressed as a %)

Comparison	t	df	Sig. (2-tailed)	Effect Size
'Score' (expressed as a %) vs. 'Perception (expressed as a %)	6.795*	280.166	.000	.764

Note. Significant at the 0.05 level. Two-tailed test.

Table 7
Levene's Test Homogeneity of Variances

F	Sig.

26.407	.000

Note. Despite the equivalency of group sizes, Homogeneity of Variances is not present for these comparisons. Equal group variances cannot be assumed. Overall Conclusion for 1j:
There is a significant difference between 'perceived ability' as represented by the DV 'Perception, and actual 'knowledge of phonics skills' as represented by the DV 'Score'. Perceived ability is higher than actual knowledge scores. Both DV's were compared as percentage scores of their total points possible for Q8-10 and Q11-20 respectively.

Discussion

The results of this study found that rural special education teachers, general education teachers, and college students lacked proficiency in phonics skills. The researchers hypothesized that college students currently in reading methods classes would score higher in phonics knowledge than teachers in the field. However, that was not the case. This study found that the college students scored significantly lower than both general education and special education teachers. It should be noted that no groups approached the perfect content score of 10 for a mean score for their phonics knowledge. Moreover, all of the participants rated their ability much higher than their actual phonics knowledge.

The results of this study cause concern related to literacy instruction and reading achievement. Without instruction in the five essential reading components (phonemic awareness, phonics, fluency, vocabulary, comprehension) children have difficulty mastering the basic skills of reading which contribute to low levels of comprehension. This is a significant finding, because in today's diverse classrooms, all teachers need to be prepared and knowledgeable in phonics. Will (2018) stated,

> As the number of students with disabilities who enroll in general education classes continues to grow, however, programs are realizing that "this is important, and the techniques you have taught your general education candidates may not be as maximally effective as they need to be for students who are really struggling to learn," said Mary Brownell, the director of the Collaboration for Effective Educator Development, Accountability, and Reform (or the CEEDAR Center) (p.14).

The results of this study raise the alarm that the status quo for literacy instruction is not sufficient. It is incumbent for Educator Preparation Programs (EPPs) to enhance their literacy instruction and practical applications through fieldwork. Moreover, professional development opportunities for practicing teachers in literacy instruction could be mandated by school district administration in an effort to boost student achievement in literacy.

Limitations

One limitation was that the researchers did not have access to a special education teachers only listserv for distribution of the survey. The researchers selected one particular university due to the specialized Reading Clinic (one-to-one intensive literacy tutoring experience) available to preservice teachers. In addition, the ranges representing years of experience did not have equal interval widths across all ranges which was another limitation. Furthermore, this study assessed

participants' knowledge on a survey instrument and not their ability to teach literacy skills in a classroom setting. It was not possible to determine whether the difference in groups were related to teacher experience, preparation, or other professional development opportunities available. This study did not establish a correlation between teacher skill and time spent teaching phonics and its effect on student achievement. In order to make that connection, student progress in reading would have needed to be measured.

Conclusion

This study represented an exploration of the knowledge/skill base of elementary education majors, special education majors, and double majors in elementary and special education, and general education and special education teachers, regarding phonics as well as perceived teaching ability of teaching phonics. However, just like previous studies involving knowledge of phonics, the results from this study indicated that teacher candidates and classroom teachers lack knowledge about phonics which is necessary to teach children to successfully read and spell. Although variables, such as our sampling technique and distribution of surveys likely contributed to the results, these findings provide support for continued research to further examine the potential need for English phonics instruction for elementary/special education majors.

Improving teachers' knowledge of English phonics (i.e., phonetics and phonology) is an essential component of reading instruction if we are to achieve widespread proficiency in reading and spelling among students in our elementary classrooms. In order to ensure that this goal is met, the authors believe that we need to have all literacy instruction conveyed by teachers and professors who are well-prepared in English phonics. Educators engage in a variety of efforts to restructure preservice educator preparation programs. Such restructured programs often focus on strengthening connections between university coursework and public school experiences, including learning the components of English phonics—phonology, vocabulary, morphology and syntax.

Although the field of literacy instruction is ever changing as new understandings and approaches are revealed through research every so often, the English phonics remains stable. New methodologies for instructing will likely continue to appear, but the elements of English phonics (etymology, morphology, phonology, etc.) will not. It is imperative that teacher candidates and licensed educators receive innovative and accurate knowledge about our language. Without it, real damage can be caused, especially to the students who are at risk of reading failure.

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About the Authors

Cheryl Wold, Ph.D. is an Associate Professor at Northern State University in Aberdeen, SD. She primarily teaches undergraduate and graduate courses in special education. Her main research interests are all areas of special education, educator preparation programs, new teacher mentoring programs, and PK-12 education. She previously worked for many years as a special education teacher and Director of Special Education.

Andria L. Moon, Ed.D. is a visiting associate professor at St. Norbert College in De Pere, WI. She also worked at Northern State University as an associate professor, department chair, and associate dean. Her research topics include literacy, technology, new teacher mentoring, educator preparation programs, and leadership.

Alan L. Neville, Ed.D. has worked as a public school administrator, teacher, and professor of education. He currently serves as a member of the South Dakota Department of Education's Mentor Development Team and Extraordinary Cost Oversight Board and is an appointed member of the statewide Distance Learning Task Force. He conducts presentations and writes on topics related to educational assessment, new teacher mentoring, and Native American studies. He is a veteran of the United States Army.

Timothy Houge, Ed.D. currently serves as a professor of elementary / secondary reading instruction at Northern State University. He has been a long-standing advocate for effective reading and spelling education for all children. He has actively promoted the use of research to inform instruction. He has been a classroom teacher, a pull-out reading specialist, and the director of a campus one-to-one literacy-tutoring clinic.

Appendix
SURVEY QUESTIONS

Demographics Questions:

1. Current Position (Select one)
   __1= College Student
   __2=General Education Teacher
   __3=Special Education Teacher
   __4= Reading Specialist

2. Level of instruction for your primary responsibility (Select one)
   __1=NA for college student
   __2=Elementary
   __3=Secondary
   __4=Middle School
   __5=K-12

3. Do you have a major in literacy instruction
   __1=Yes
   __2=No

4. Do you have a minor in literacy instruction
   __1=Yes
   __2=No

5. Years of experience in teaching
   __1=0 years
   __2=1-3 years
   __3=4-10
   __4=11-20
   __5=21-30
   __6=31-40
   __7= 41+

6. University where you earned your degree(s)_____

7. Degrees you hold (i.e., B.S. Elementary Education, B.S. Special Education, etc.)_____

Perceptions

8. How would you rate your ability to teach reading to typically developing readers?

   1= not at all 2= minimal 3= moderate 4=very good 5=expert

9. How would you rate your ability to teach reading to struggling readers?

1= not at all 2= minimal 3= moderate 4=very good 5=expert

10. How would you rate your ability to teach phonics?

1= not at all 2= minimal 3= moderate 4=very good 5=expert

Phonics Content Questions

11. How many phonemes are represented in the nonsense word phight?
12. A diphthong is best illustrated by the vowels representing the sound of…
13. An example of a closed syllable is found in the word…
14. The letter *y* is most likely to be a consonant when…
15. When *o* and *a* appear together in a syllable, they usually represent the same sound as…
16. The symbol *s* is used in the dictionary to show the pronunciation of the sound heard in…
17. When *c* is followed by *i,* it will most likely represent the same sound as in…
18. The symbol *w* is used in the dictionary to show the pronunciation of the sound hear in…
19. Which underlined item illustrates a free morpheme?
20. Which word includes both a free and a bound morpheme?

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