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Delphi Technique: Parents Identify Protective Factors to Address Problem Behaviors in Adolescents With and Without Disabilities

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Abstract

Using a 3-Round Delphi Technique, the current study aimed to ascertain consensus regarding parents' thoughts about the school, home, and community protective factors (i.e., preventive behavior interventions, behavior resources) needed to prevent adolescents from referral to behavior school and subsequent involvement in the juvenile system. A convenience sample of forty-nine ($N = 49$) parents served as expert panelists, as they each had an adolescent between 15 and 19 years old who was attending high school. Consensus was set at 80% prior to beginning the study. Results indicated that there was consensus regarding parents' beliefs that access to information and services, parent involvement, and community programs and activities were important, as they were protective factors that cut across school, home, and community contexts. Conclusions, limitations, and suggestions are also presented for the study.

Keywords: Ecological Systems Theory, protective factors, adolescence, behavior problems, Delphi

Delphi Technique: Parents Identify Protective Factors to Address Problem Behaviors in Adolescents With and Without Disabilities

According to the U.S. Department of Health & Human Services (HHS, 2017), in 2016 there were approximately 42 million adolescents between the ages of 10 (pre-adolescence) and 19 (late-adolescence) living in the U.S. Although they made up almost 13% of the total population during that year, it was estimated that this number would decrease as the population ages (HHS, 2017). By 2050, it is estimated that adolescents will make up only about 11% (44 million) of the projected population (HHS, 2017) of 458 million. Although declining in number by 2050, there will still be a significant number of adolescents who may need attention (e.g., services and supports) because of ongoing problem behaviors (internalizing and externalizing; Mojtabai & Olfson, 2020) experienced during adolescence.

From the onset of puberty until they are in their mid-twenties, adolescents experience a time of significant development (HHS, 2018; Levy, 2019). This time is typically described as one where the adolescent undergoes many changes related to their perceptions and feelings about themselves, their families, their neighborhoods, their schooling experience, and their cultural identity**.** Additionally, adolescents begin to experiment with gaining autonomy from their parents (Vander Zanden et al., 2000) and other adults (i.e., teachers, community leaders; White & Renk, 2012). This new independence is an important part of their development but can be fraught with rifts that develop between adolescents and their parents, their schools, and their neighborhoods. Adolescents and the adults across the school (i.e., teachers and other school personnel), home (i.e., parents, siblings, etc.), and community/neighborhood (i.e., pastors, business owners, law enforcement) contexts must learn to strike a delicate balance to see the adolescent through this

development stage. This balancing act can oftentimes be a struggle for the adolescent as well as others involved with him/her. Thus, it is important to examine adolescents in the context of their school, home, and their neighborhood selves, as well as the protective factors present in each context that could help mitigate some of the problem behavior exhibited by many adolescents. Because they will be more than one-tenth of the U.S. population, it is important that we understand how we can help them navigate the contexts in which they spend much of their time. If we do not, then these adolescents will experience the negative results of their problem behaviors.

Results of Adolescent Problem Behavior

It is well documented that (Brown, et al. 2020; Kupchik, 2010); Mallett, 2016a; 2016b), schools' reliance on exclusionary discipline practices (i.e., in-school suspensions [ISS], out-of-school suspensions [OSS]) has contributed to a figurative "school-to-prison pipeline." Oftentimes, adolescents who engage in misconduct at school are arrested and transferred to the juvenile justice system. In fact, in the 2013-2014 school year, nearly 70,000 students were arrested while at school (Education Week, 2017; OCR, 2017). The numbers of children and adolescents experiencing these exclusions yearly is troubling, as they oftentimes exacerbate many adolescents' behavior problems and continue to contribute to their negative academic and behavioral outcomes.

In-School Suspension

One way that adolescents' behavior problems manifest themselves is with their referral to in-school suspension. During the 2015-16 school years, over 2.7 million students received one or more in-school suspensions (OCR, 2018). Almost 20% (527,000) were students with disabilities.

Out-of-School Suspension (Alternative School Placements)

Over 1.5 million students received only one out-of-school suspension during the 2015-2016 school year (Office of Civil Rights [OCR], 2018). Of that 1.5 million, nearly 332,000 (21%) were students with disabilities (OCR)**.** According to Eilers (n.d.), this equated to a loss of almost 11 million school days. Similarly, during the same school year, over 65,000 (21.5%) students, 14,000 with disabilities, were transferred to alternative schools.

Juvenile Justice Involvement

According to OCR, in the 2015-2016 school year 290,600 students were referred to law enforcement or resulted in arrest. Almost 82,500 (28%) were students with disabilities. The numbers were similar during the 2013-2014 school year with 260,000 referrals and 92,000 arrests (OCR, 2014). Likewise, in 2018 nearly 728K (7% of all arrests) adolescents under the age of 18 were arrested in the U.S. (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2019). Although a large portion of these referrals come from the schools, adolescents do experience negative interactions with the law when at home and in their communities (DOJ). To mitigate ISS, OSS, and juvenile system involvement, it is imperative that we understand the school, home, and community risks for problem behavior so that we can put more protective factors into place.

Risk and Protective Factors

This study was viewed through the lens of *protective factors*, as it was instrumental in shifting the focus from adolescents' deficits to what we can do to facilitate the healthy development (behavioral and academic) of adolescents. As such, protective factors in this study have been defined as the school (institutional), family/home, and community, preventive behavioral interventions and resources that promote successful adolescent development or that could potentially buffer risk factors that might otherwise compromise development. The following sections briefly discuss the findings in each of these contexts.

School

Research has consistently identified three risks (i.e., care and support in schools. high student expectations, school bonding) associated with schools. To mitigate these risks, protective factors have been identified for each risk area. For example, for caring and support in school (Zhang, et al. 2019), it is recommended that schools provide (a) nurturing staff and positive role models, (b) creative and supportive school leadership, (c) peer support, cooperation, and mentoring, (d) personal attention and interest from teachers, and (e) a warm, responsive school climate. In terms of holding high expectations, it is recommended that schools emphasize (a) a minimum mastery of basic skills for all students, (b) higher order academics, and (c) decreases in negative labeling and tracking (Bernburg, 2019; Lemert, 1967). Finally, adolescents must also have meaningful school bonding (Payne, 2008; Yang & Anyon, 2016). Providing leadership and decision-making opportunities, more extracurricular activities, opportunities for parent and community participation in instruction, and culturally diverse curricula and experiences allows adolescents to connect more with their schools.

Family/Home

Research has also identified areas of concern in the family. Therefore, families have an obligation to address these potential risks to the best of their abilities. Family management problems (e.g., parental monitoring; Fosco, et al., 2012; Keijsers, 2016), family conflict (stress; Timmons & Margolin, 2015), family history of antisocial behavior (Maguire & Fishbein, 2016), and favorable parental attitudes toward problem behavior (Maguire & Fishbein, 2016) have all been identified as potential risks to adolescents developing problem behaviors.

Researchers have recommended that adolescents' families provide (a) structure, (b) limits, rules, monitoring, and predictability (Hoffman, 2006), (c) supportive relationships with family members (Triyanto & Iskandar, 2014), (d) clear expectations for behavior and values, (e) balance of autonomy and relatedness to family (Fosco & LoBraico, 2019), and (f) behavioral and emotional autonomy to reduce the impact of risks on adolescents. Researchers (Shader, 2003; Vanderbilt-Adriance & Shaw, 2008) have also identified strong parent-child relationships with nondeliquency. Additionally, Owens and Shaw (2003, p. 274) identified strong parent-child relationships and parental involvement as protective factors for adolescents who may be at risk for social, emotional, and behavioral problems.

Community

Like school and home environments, community risk factors have been widely studied. From these studies, several risk factors have been identified, ones that often lead to behavior problems in adolescents. For example, communities with (a) a higher availability of drugs/or weapons,

(b) community laws and norms favorable toward problem behavior, (c) low neighborhood attachment and community disorganization, and (d) severe economic deprivation (Lambert, et al., 2005; Mrug & Windle, 2008; Murray, et al., 2011; Vanderbilt-Adriance & Shaw, 2008) can lead to an increase in behavior problems in adolescents.

To mitigate some of these risks, researchers have advocated for (a) safe and health-promoting neighborhoods, (b) supportive law enforcement, (c) positive social norms, (d) opportunities for prosocial (i.e., volunteering, donating, sharing, etc.; Romano, et al. 2005) community involvement (Flanagan, et al., 2014; Jiménez, et al., 2009), (e) rewards for their prosocial community involvement, (f) availability of neighborhood resources and preventive interventions (Lenzi, et al. 2012), (g) high expectations from the community, and (h) neighborhood/social cohesion (Lenzi et al. 2012).

Adolescents with behavior problems represent a small percentage of the adolescent population. Typically, these adolescents exhibit repeated externalizing behaviors (e.g., aggression, delinquency, hyperactivity, etc.) that can have negative impacts at school (e.g., poor grades, poor peer and teacher relationships, suspensions, expulsions, dropping out; (ECS, 2018; Kremer, et al., 2016), at home (e.g., poor child-parent relationships; Owens & Shaw, 2003; youth.org, n.d.) and in their communities (e.g., delinquency, juvenile system involvement; Ehrmann, et al. 2019). Additionally, some students, because of their personal characteristics (e.g., feelings of alienation, academic failure, disability status, economic deprivation, family conflict), may be more predisposed to problem behaviors. However, if school, home, and community environments identify the protective factors that mitigate these adolescents' risks, they might begin to change the adolescents' life outcomes.

Theoretical Framework

Systems (Ecological) Theory

This study utilized a framework based upon the ecological systems theory (Bronfenbrenner, 1979; 1986) because it specifically focuses on the importance of interactions within and between life contexts. In this study, this refers to school, home, and community contexts (mesosystems). It also addresses that behavior is influenced by a variety of factors that work together as a system. An adolescent's parents (Bronfenbrenner, 1986), school, home environment, community, and other factors all influence how they think and act (Duerden & Witt, 2010). Correcting missing or ineffective parts of that system can have a positive impact on behavior. The reverse, of course, is also true.

Materials and Methods

Participants

The participants (expert panelists) in this study were parents ($N = 49$) who had children in the participating school. To conduct a Delphi study, the researcher predetermines the criteria for the expert panelists. The following criteria were required to be met for participation: 1) the panelist had to be a parent of a child in the participating school, 2) the panelist's child had to be between 15 and 19 years of age (mid-to-late adolescence). The panelists in this study had children who fell in the mid-adolescent (15 – 17) years. Prior to conducting the study, the researcher met with the school principal to provide details regarding the study and to obtain verbal consent to

participate and access their parents. Table 1 provides the panelists' demographic information for Rounds 1-3.

Table 1

Demographic Table

Demographic Category	Round 1 (*N* = 33)	Round 2 (*N* = 14)		Round 3 (*N* = 2)	
		Yes	No	Yes	No
	Participated in Round 1	*3*	*11*	*0*	*2*
	Participated in Round 2	*NA*	*NA*	*2*	*0*
Race or Ethnicity					
• White, non-Latinx	23	10		2	
• Black/African American	1	1		0	
• Latinx	4	2		0	
• Asian/Asian American	2	1		0	
• Alaska Native/Pacific Islander	0	0		0	
• Native American	0	0		0	
• Multiracial	2	0		0	
• Prefer not to answer	1	0		0	
Primary language spoken at home					
• English	33	13		2	
• Spanish	0	0		0	
• Other	0	1 (Swedish)		0	
Demographic Category	Round 1 (*N* = 33)	Round 2 (*N* = 14)		Round 3 (*N* = 2)	
Panelist Relationship to student					
• Mother	28	11		2	
• Stepmother	0	1		0	
• Father	3	2		0	
• Stepfather	0	0		0	
• Foster parent	1	0		0	
• Grandparent	1	0		0	
Documented disability (student)					
• Yes	14	3		0	
• No	19	11		2	
Disability classification (student)					
• Learning disability	6	3		0	
• Emotional Behavior Disorder	6	1		0	
• Intellectual Disability	1	0		0	
• Not sure	1	0		0	
• No disability	18	10		2	
• Prefer not to answer	1	0		0	

Gender (student)			
• Male	19	8	2
• Female	14	6	0
• Gender nonconformity	0	0	0
Age (student)			
• 15	11	4	2
• 16	10	5	0
• 17	11	3	0
• 18	1	2	0
• 19	0	0	0
Referral to behavior school or juvenile facility			
• No, neither	30	11	1
• Yes, academic/behavior center	3	2	1
• Yes, juvenile facility	0	0	0
• Yes, both	0	1	0
Length of stay at behavior school of juvenile facility			
• 0 – 4 months	3	2	1
• 5 – 8 months	0	0	0
• 9 – 12 months	0	0	0
• > year	0	0	0
• Doesn't apply	30	12	1
Currently in behavior facility of juvenile facility			
• Yes	0	0	0
• No	33	14	2

Demographic Category	Round 1 ($N = 33$)	Round 2 ($N = 14$)	Round 3 ($N = 2$)
Returned to traditional school			
• 0 – 4 months	1	1	0
• 5 – 8 months	1	0	0
• 9 – 12 months	0	0	0
• > year	1	1	1
• Doesn't apply	30	11	1
• No response	0	1	0
Number of times referred to behavior school or juvenile facility			
• 1	3	3	1
• 2	0	0	0
• 3	0	0	0
• > 4	0	0	0
• N/A	30	11	1
Infraction category			
• Property destruction	0	0	0
• Physical harassment, including bullying	0	1	1
• Verbal harassment, including bullying	1	0	0
• Robbery, theft	0	0	0
• Weapons possession	0	0	0
• Drug possession, use, and/or distribution	2	1	0
• Disrespectful to school staff (e.g., teachers, administrators, other personnel)	0	0	0
• N/A	30	12	1
Difficulties at home and in the community			
• No, neither	9	8	0
• Yes, one or both	3	1	1
• N/A	9	5	1
• No response	12	0	0

Measures

All the panelists completed a demographic questionnaire that included questions regarding (a) their relationship to the student/child, (b) age of student/child, (c) race or ethnicity, (d) primary language spoken at home, (e) gender of the student/child, (f) disability status, and several questions related to behavioral referrals. In addition, one overarching essential question guided this research study: What school, home, and community *protective factors* (e.g., preventive interventions, resources) are needed to prevent adolescent problem behavior? Additionally, in Round 1, panelists completed the six open-ended questions that follow.

Open-Ended Questions: Round 1
In addition to the demographic questions, the panelists were asked to provide up to three responses to the following open-ended research questions. The panelists were also provided with definitions of preventive behavior interventions and behavior supports prior to beginning Round 1.

Q1. What school-based preventive behavior interventions are needed to prevent adolescents' referral to behavior schools?
Q2. What school-based behavior supports are needed to prevent referral to behavior schools?
Q3. What family/home-based preventive behavior interventions are needed to prevent adolescents' infractions at home and subsequent involvement in the juvenile system?
Q4. What family/home-based behavior supports are needed to prevent adolescents' infractions at home and subsequent involvement in the juvenile system?
Q5. What community-based preventive behavior interventions are needed to prevent adolescents' community infractions and subsequent referral to a juvenile facility?
Q6. What community-based behavior supports are needed to prevent adolescents' community infractions and subsequent referral to a juvenile facility?

Aggregated Categories: Round 2
The questionnaire for Round 2 consisted of the aggregated categories and the aggregated categories and statements from Round 1 and asked that the panelists rate the responses on a 5-point Likert-type scale from one (*strongly disagree*) to five (*strongly agree*). The participants were asked to select the number along the scale that most closely matched their level of agreement with the aggregated categories and statements. The themes that received 80% agreement (agree and strongly agree responses combined) were considered to have reached consensus. The remaining aggregated categories and statements were used to create the questionnaire for Round 3

Non-Consensus Aggregated Categories: Round 3
The round-three questionnaire was comprised of the aggregated categories and statements that did not reach consensus in Round 2. In this round, the panelists were asked to rate the aggregated categories and statements once again to reach consensus. The remaining aggregated categories and statements were rated on a Likert scale, with panelists indicating their level of agreement. Panelists were also provided with the frequency (percentage) of agreement for each aggregated category and statement from Round 2. One additional question was added to the Round's 2 and 3 questionnaires to get a sense of how many panelists participated in the preceding rounds. The question required panelists to indicate whether they had participated in the previous round. As reported in Table 1, three panelists from Round 2 participated in Round 1 and both participants from Round 3 participated in Round 2.

Setting

This research study was conducted in a traditional high school in a large, urban school district in the western part of the U.S. The district and school demographics are outlined in the following sections.

School District
The school district is large, urban, and diverse. According to school district data (2018-2019), there were approximately 320,000 students enrolled, with over 360 K-12 schools, including alternative and special. The district ethnic distribution was majority minoritized, including: Latinx (46%), Caucasian (25%), African American/Black (14%), Multiracial (7%), Asian/Asian American (6%), Hawaiian/Pacific Islander (2%) and Native American (< 1%). The graduation rate for the district was 83% and 64% of the students qualified for the federal free and reduced lunch program.

School
The high school itself is not characteristic of other high schools in the district. For the 2016-2017 school year, there were 3,216 attending students across grades 9 through 12. There was a student-to-teacher ratio of 27:1 (21:1 for the state), the enrollment of students from minoritized backgrounds was at 50% (68% for the state), with many of those students coming from Latinx backgrounds (24%). Math and reading/language arts proficiency scores (76% and 73%, respectively) were higher than for the state (40% and 48%, respectively). In 2016-2017, it was ranked in the top 20% of schools in the state for overall rank (top 10%), math proficiency (top 10%), reading/language arts (top 20%), and graduation rate (top 20%). Finally, just 16% of the students were eligible for free lunch, with 3% eligible for reduced lunch. Both were lower than the state average (52% and 6%, respectively).

Design and Procedures
The research design of this study was the Delphi method. It was used to better understand, from the parents' perspective, what is needed to prevent adolescents' referral to behavior schools/centers. This Delphi method utilized three rounds of questionnaires sent to a panel of experts (Dalkey, 1967). Each round of the questionnaire was sent out to the group of experts, and the anonymous responses were aggregated and shared with the group after each round. Prior to beginning each round (Rounds 2 and 3), a modification was submitted to the Institutional Review Board (IRB) for approval. Once approval was received, the questionnaires for Rounds 2 and 3 were sent to the panelists via online survey. The experts were allowed to adjust their answers in subsequent rounds, based on how they interpreted the "group response" and theme that was provided to them. Because multiple rounds of questions were asked and the panel was told how the other panelists responded, the Delphi method was used to reach the correct response through consensus.

eDelphi
This study utilized an "e-survey" to collect data, as it is a readily accepted tool for the facilitation of rapid, simple, and inexpensive collection and management of data and participants (Msibi, et al. 2018). Panelists accessed the questionnaire via an online platform link unique to this study. Immediately upon accessing the link, they were provided with a welcome, instructions for completing the questionnaire, and the purpose for the study. All the researcher's contact information was included on the platform, as well as institutional contact information. Once the panelist consented by using the accept button, they were directed to the start of the questionnaire. If they declined, they were thanked and not allowed to complete the questionnaire. Once the questionnaire was accessed, they could stop and return to the questionnaire later within the 30 days

that the questionnaire was live. All questionnaires that were incomplete following the 30 days were not included in the data analysis.

Initially, each round was scheduled to remain open and accessible on the online platform for 30 calendar days. However, at the start of the third round, the school district closed due to COVID-19. During this time, the panelists did not access the online platform in the same numbers as in the previous 2 rounds. After 60 days of inaction, the researcher closed the survey and recorded the responses submitted.

Results

Descriptive Statistics

Table 1 presents the demographic information for all three rounds of this Delphi study. For this study, there were 49 panelists (Round 1 [n = 33], Round 2 [n = 14], Round 3 [n = 2]) across the three rounds. The overwhelming majority of the panelists were White (n = 23), spoke English (n = 48 [98%]) and were the mother of the student (n = 41 [84%]). In addition, seventeen (34.7%) panelists indicated that their child had a documented disability, forty-six (95%) of the students were 15, 16, or 17 years old (35%, 31%, and 29% respectively), and six (12%) panelists indicated that their son/daughter had been referred to a behavior school or involved with the juvenile justice system.

Delphi Analyses by Round

Round 1

The results from Round 1 are based on six open-ended questions regarding preventive behavior interventions and behavior supports needed at school, in the home, and in the community to prevent adolescents' referrals to behavior schools and subsequent involvement in the juvenile justice system. During Round 1, 91 initial items were created from the content analysis of the panelists' responses to the six open-ended questions. Examples of open-ended responses to question 1 (Q1) are the following: *"school distribution of information about outreach/support services in the community" and "behavior programs on campus."* In total, there were 32 aggregate categories across the six questions, including the following aggregated categories that yielded the greatest number of responses: school intervention programs (Q1); allocation of resources (Q2); parent involvement (Q3); access to services (Q4); community programs and activities (Q5); and access to information (Q6). Tables 2-7 present the aggregated categories for all six questions.

Table 2
Round 1: Aggregated Categories for School-Based Preventive Behavior Interventions (Q1)

Example Panelist Responses	Frequency (N = 28)	Percent of Responses	Aggregated Categories
Course or presentation addressing seriousness of the outcome if adolescents continue with behavioral issues.	2	7%	Access to Information

School distribution of information about outreach/support services in the community.			
I think it is important that students feel safe. More school police, campus monitors to help avoid problems. Better campus security.	3	11%	School Safety
Smaller class sizes (x2)	2	7%	Class Size
It's important to make adolescents know and feel comfortable talking to a counselor (X2). More school counselors and social workers (X2).	4	14%	Access to School Services
I think that parents and teachers have to work together as a whole.	1	3.5%	Home -School Cooperation
Better food should be served that is more nutritious. Better for minds, their energy, attitudes and overall health.	1	3.5%	School Nutrition
Clear set of behavior expectations for every student that is upheld in order for them to attend a public funded school. If they can't, they don't attend. Clear cut set of rules and natural consequences that are equally and consistently enforced.	3	11%	School Policies and Practices (Behavior)

Example Panelist Responses	Frequency ($N = 28$)	Percent of Responses	Aggregated Categories
Clear set of behavior expectations for every student that is upheld in order for them to attend a public funded school. If they can't, they don't attend.	3	11%	School Policies and Practices (Behavior)
Implementations of the Life Skills Training (LST) or Positive Action (PA) program. Drug Intervention programs for students who have been caught using/distributing drugs. Truancy program that is an intervention program with consequences such as school detention, picking trash up. Classroom court. Behavior programs on campus. Check-in Program with counselor. Programs that begin when students are younger. Less focus on testing and more on development of moral and character development programming through celebrating sports, holidays, music, arts, and activities more.	9	32%	School Intervention Programs
Mentoring. Teachers and staff that actually care. Teacher training on how to disseminate information with compassion and discretion.	2	7%	Access to Related Services
School custodial assistance (i.e., graffiti removal from walls, sweep lunchroom, etc.)	1	3.5%	Outlier

Table 3
Round 1: Aggregated Categories for School-Based Behavior Supports (Q2)

Example Panelist Responses	Frequency ($N = 16$)	Percent of Responses	Aggregated Categories
Patient and kind teachers and faculty could bring about a huge change for the better regarding this matter. Teacher training on how to disseminate information with compassion and discretion.	2	13%	Teacher Characteristics/Qualities
Implementation of Life Skills Training (LST) or Positive Action (PA) Programs. Mentor programs for students at risk. The HARBOR coming directly to the school.	3	19%	School Programs
Smaller class sizes.	1	6%	Class Size
School distribution of information about outreach/support services in the community.	1	6%	Access to Information
Go back to holding parents responsible – the school is not the parent.	1	6%	Accountability
Larger budgets for schools to pay for behavioral teachers and behavioral classroom portables. Less money for special education. More money for teacher support and character development. More money to smaller and more manageable class size.	4	25%	Allocation of Resources

Example Panelist Responses	Frequency (N = 16)	Percent of Responses	Aggregated Categories
Counseling. Preventive, regular counseling combined with family nights that are implemented BEFORE interventions are needed. Counseling programs for students at risk. Additional counseling staff in schools.	4	25%	Access to Related Services

Table 4
Round 1: Aggregated Categories for Family/Home-Based Preventive Behavior Interventions (Q3)

Example Panelist Responses	Frequency (N = 19)	Percent of Responses	Aggregated Categories
Make parents parent. Make students have consequences when their parents don't follow through with appointments for mental health or behavior interventions.	2	11%	Accountability
Parenting classes offered through the school.	1	5%	Parent Training
Establish Boys Town to assist parents on how to discipline and run a successful home. Make people aware of services. Have each school contract with community agencies around them. School referrals for students and parents for outside help.	4	21%	Access to Services
Patience, love, and structure are key. Parents modeling good behavior. Teach respect for teachers as well as other students. Realistic, enforced expectations coupled with natural consequences, compassion. Relate to them and reassure them — that they are not alone.	5	26%	Child-Rearing Practices

Example Panelist Responses	Frequency (N = 19)	Percent of Responses	Aggregated Categories
Parent supervision. Active involvement in the student's behavioral issues. Talk to your kids and allow them to talk to you. Parent involvement. Show an interest in the life/education of your child and make them feel valued. High parental involvement. Active and involved parenting through family nights, family dinners, family discussions, interactions with other families, assistance with homework, support with balancing home/work/sports/school activities and family vacations.	7	37%	Parent Involvement

Round 2

In Round 2, panelists ranked the 32 aggregate categories on a 5-point Likert scale, indicating the degree to which they agreed that the item was important. Prior to the beginning of the study, the researcher determined that 80% (agree plus strongly agree) would constitute consensus. Panelists came to consensus on 23 (71.9% of the items) items. So, the panelists determined at this point that 23 of the aggregate categories encapsulated what were necessary preventive behavior interventions or behavior supports and resources to decrease adolescents' involvement with behavioral referrals to behavioral centers and/or involvement in the juvenile justice system. Example aggregate categories on which the panelists reached consensus in Round 2 included Access to Information (M = 4.43 points, SD = 0.73 points, Mdn = 5.0) with responses like *"course or presentation addressing seriousness of the outcome if adolescents continue with behavioral issues"* and *"school distribution of information about outreach/support services in the community",* as well as Access to Services (M = 4.50, SD = 0.50, Mdn = 4.50) and included this sample response, "*parents should be able to contact the school for counseling assistance/advice regarding the behavioral issue."* Tables 2-7 present the panelists' verbatim responses along with the aggregate categories that reached consensus.

Table 5

Round 1: Aggregated Categories for Family/Home Behavior Supports (Q4)

Example Panelist Responses	Frequency (N = 8)	Percent of Responses	Aggregated Categories
Financial resources for intensive counseling. Financial aid for residential teen programs not based solely on income.	3	38%	Financial Resources

Help and support when the child is in elementary school.			
Spend time with your kids. You're all they got!	1	13%	Parent Involvement
Parents should be able to contact the school for counseling assistance/advice regarding the behavioral issue. Parents could use support by counselors and social workers. Home visits by school social workers. Family counseling at the home.	4	50%	Access to Services

Table 6

Round 1: Aggregated Categories for Community-Based Preventive Behavior Interventions (Q5)

Example Panelist Responses	Frequency ($N = 10$)	Percent of Responses	Aggregated Categories
Better "policing" by the community to help decrease truancy. People should be nicer. Help your neighbors and chances are they will do the same.	2	20%	Sense of Community
Community outreach that educates parents on the important role they have in the life of their child. Teaching parents the importance of caring for their child.	2	20%	Parent Education/Training
Adolescent programs or activities. The community could have more options for help. Community-based youth programs. More after-school programs funded for at-risk students. Training for jobs that do not require college. Sports	6	60%	Community Programs and Activities

Table 7
Round 1: Aggregated Categories for Community-Based Behavior Supports (Q6)

Example Panelist Responses	Frequency (N = 9)	Percent of Responses	Aggregated Categories
True relatable guidance. Positive male role models.	2	22%	Mentoring
An understanding of how the correctional system works and how to avoid it. Community outreach that educates parents on the important role they have in the life of their child.	2	22%	Access to Information
More quality mental and behavioral health options Just more of them. Ensuring that families have access to affordable healthcare and treatment facilities that specializes in interventions with teens.	3	33%	Access to Services
More teen-based work programs Mentoring, counseling and develop self-esteem when they have meaningful work (not just reporting to work)	2	22%	Community Programs

Consensus was not reached on 22 of the 91 (24.2%) panelist responses or 11 (28%) of the aggregate categories. For example, School Safety (M = 3.86, SD = 0.91, Mdn = 4.0) from Q1, Allocation of Resources (M = 3.5, SD = 1.05, Mdn = 3.0) from Q2, and Access to Information (M = 3.57, SD = 0.98, Mdn = 5.0) from Q6 did not meet the 80% consensus criteria. See Table 8 for all themes that did not reach consensus.

Table 8
Round 2: Aggregated Categories That Reached Consensus

Aggregated Categories	Mean	*SD*	Median	*IQR*	Round 1 (%)
Access to Information (Q1)	4.43	0.73	5.0	1.0	85.7
Class Size (Q1)	4.79	0.41	5.0	0	100
Intervention Programs (Q1)	4.29	0.88	4.5	1.0	85.7
Access to Services (Q1)	4.21	0.86	4.0	1.0	85.8
Home-School Cooperation (Q1)	4.79	0.41	5.0	0	100
School Policies and Practices (Q1)	4.57	0.49	5.0	1.0	100
Teacher Characteristics (Q1)	4.79	0.56	5.0	0	92.8
Access to Services (Q2)	4.57	0.62	5.0	1.0	92.9

Teacher Qualities (Q2)	4.50	0.91	5.0	1.0	85.7
Class Size (Q2)	4.86	0.35	5.0	0	100
School Programs (Q2)	4.57	0.49	5.0	1.0	100
Access to Information (Q2)	4.43	0.62	4.5	1.0	92.9
Accountability (Q2)	4.29	0.70	4.0	1.0	85.8
Parent Involvement (Q3)	4.79	0.41	5.0	0	100
Parent Training (Q3)	4.21	0.77	4.0	1.0	92.8
Access to Services (Q3)	4.50	0.50	4.5	1.0	100
Parenting (Q3)	4.86	0.35	5.0	0	100
Access to Services (Q4)	4.50	0.50	4.50	1.0	100
Parent Involvement (Q4)	4.93	0.26	5.0	0	100
Financial Resources (Q4)	4.14	1.06	4.0	1.0	85.8
Aggregated Categories	Mean	*SD*	Median	*IQR*	Round 1 (%)
Community Programs and Activities (Q5)	4.57	0.82	5.0	1.0	92.8
Access to Services (Q6)	4.57	0.82	5.0	1.0	92.8
Community Programs (Q6)	4.43	0.82	5.0	1.0	92.8

Round 3

There were eight aggregate categories from Round 2 that did not reach consensus. Of those eight, just four made consensus following Round 3, including school nutrition (Q1), accountability (Q3), sense of community (Q5), and mentoring (Q6). All reached 100% consensus in this round. The other four themes did not reach consensus. See Table 9 for more information regarding Round 3 aggregate categories.

It should also be noted that the expert panelists identified several things across the questions in Round 1. For example, Access to services was identified as important in Questions 1, 2, 3, 4, and 6; Access to information was identified as important in Questions 1 and 2; parent involvement was important across Questions 3 and 4; and community programs and activities were important across Questions 5 and 6. These are things that school personnel and community leaders might want to account for when considering the needs of families in their communities. See Table 8 for all the consensus aggregate categories from Round 1, but also for the aggregate categories that were consistent across questions.

Table 9
Percent Change for Non-Consensus Aggregated Categories After Round 3

Aggregated Categories	Mean		*SD*		Median		*IQR*		Rd. 2 (%)	Rd. 3 (%)	% Change
	Rd. 2	Rd. 3	Rd. 2	Rd. 3	Rd. 2	Rd. 3	Rd.2	Rd. 3			
School Safety (Q1)	3.86	3.00	0.91	1.0	4.0	3.0	0	2.0	78.5	50.0	- 28.5
School Nutrition (Q1)	4.07	5.00	0.96	0.0	4.0	5.0	2.0	0	71.5	100*	+28.5
Allocation of Resources (Q2)	3.50	3.00	1.05	1.00	3.0	3.0	1.0	2.0	42.8	50	+7.2
Accountability (Q3)	4.00	5.00	0.93	0.00	4.0	5.0	2.0	0	71.4	100*	+28.6
Parent Education/Training (Q5)	4.07	3.50	1.22	.50	4.5	3.5	1.0	1.0	78.6	50	- 28.6
Sense of Community (Q5)	4.14	4.50	0.74	0.50	4.0	4.5	1.0	1.0	78.6	100*	+21.4
Access to Information (Q6)	3.57	2.50	0.98	0.50	5.0	2.5	1.0	1.0	50.0	0	- 50.0
Mentoring (Q6)	4.21	4.50	0.86	0.50	4.0	4.5	1.0	1.0	78.6	100*	+21.4

Note. * Indicates aggregated categories that reached consensus in Round 3, but not in Round 2.

Conclusion

The research findings indicated that parents in this study agreed that their adolescent's school has an important role to play in the mitigating problem behaviors in adolescents. Thirty-two percent of the parents agreed that additional school intervention programs (e.g., behavior programs, moral and character development, drug intervention) are necessary. Additionally, 25% of parents agreed that having access to related services (e.g., preventive, and regular counseling, more counselors) and the reallocation of resources (e.g., behavior teachers, smaller and more manageable classrooms, teacher support and character development) at their child's school were resources important to their adolescent's positive behavioral development.

The research findings also indicated that parents in this study understood the importance that family plays in the behavioral development of their adolescents. Parents agreed that parent involvement. The parents in this study indicated that monitoring and active and ongoing involvement from parents is important preventive behavior measures. Additionally, they indicated that child-rearing practices were important preventive behavior interventions (e.g., modeling, love, structure, and patience) to alleviating problem behaviors in their child. Parents also indicated that increased access to services (e.g., family, individual counseling, social workers) is needed by families to offset some of the behavioral risks present in the home. Parents also indicated that the community has an important role to play in the behavior development of adolescents. Sixty percent of the parents agreed that more community programs and activities (e.g., after-school programs, job training, increased help options) are needed for adolescents to prevent some of the problem behaviors in the community. They also agreed that additional resources are needed in the community, including access to information and access to services. They suggested that communities provide more information regarding navigating the correctional system, as well as community outreach activities. They also indicated wanting more access to community services involving mental and behavioral health, treatment facilities, and healthcare for their adolescent. It is also important to note that the parents in this study were consistent in their desire to have access to information and services across school, home, and community.

Emotional and behavioral problems of adolescents have been a major concern for teachers, parents/families, and the public (communities) for decades. In the last school year for which data was reported, over 2.7 million students received one or more ISS, nearly 1.5 million received OSS, and nearly 291,000 students were referred to law enforcement or arrested (OCR, 2018). But these problems behaviors are not isolated to the school environment. In 2018, over 700,000 adolescents under 18 were arrested (OJJDP, 2019). Many of these arrests took place in the communities in which the adolescents lived. These numbers represent millions of days and hours of academic instruction lost and/or away from home, but it also signifies that our adolescents may be in crisis. Therefore, it is imperative that schools, parents, and communities work together to identify the cause of the crisis (i.e., risks) so that collaboration can occur across contexts to identify, institutionalize, and implement protective factors (i.e., preventive interventions and resources) that are most effective across the school, home, and community.

Limitations and Suggestions

In this study, the sample included parents from one large high school in a large school district in the western U.S. Therefore, the generalization of these findings to other districts, households, and communities in other parts of the U.S and in other countries is limited. The present study was conducted in a racially and ethnically diverse location, but the participants in this study are not reflective of that. When replicating this study, researchers may take measures to assure that participants are more representative of their school district, communities, and the U.S. Additionally, due to the COVID-19 virus school and district closures affected the level of participation in Round 3. It is suggested that researchers have contingency plans in place for future disruptions to research.

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Public K-12 Education Response to Serving Special Education Students During COVID: A Content Analysis

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Abstract

From the onset of COVID-19, public K-12 schools were scrambling to keep classrooms open virtually providing all students with meaningful learning experiences. This study provides a synthesis of insights gained about K-12 special education service provision during COVID. A content analysis benchmarking approaches to serving special education K-12 students during COVID-19 included a review of current literature, government, state documentation, and public advocacy data revealed the complexities of this issue. When services are not provided, the school is out of compliance, directly affecting students' educations and the funding the school district receives to support special education programs. Furthermore, when school districts lacked the forethought to anticipate the unexpected or address how to serve students remotely, students were left to fend for themselves. This disruption in legally mandated services detrimentally affected these students and their special education teachers, paraprofessionals, parents, as well as caregivers.

Keywords: Special education services, COVID, compliance, public K-12 schools, regions, special education teachers and caregivers

Public K-12 Education Response to Serving Special Education Students During COVID: A Content Analysis

With the onset of COVID-19, increased infection rates, and deaths among US citizens drastic measures were taken by individual states to protect the health and welfare of the populace. The burden of how and when to close K-12 public schools fell onto state governors and state led education agencies such as school boards of education, school superintendents, and departments of education. Public school closures were executed quickly with K-12 public school districts having to pivot to virtual or distance learning within a matter of days in March 2020. Students attending K-12 public schools may have received homework packets, projects, long-term assignments, laptops, or tablets which would allow for some resemblance of instruction that would have occurred in person. Initially, how long students would virtually attend school was the great unknown. Within the chaos that ensued, a specific population of K-12 public school students were not thoughtfully considered as to the impact virtual learning would have on their learning. This population, special education students who have active and ongoing individualized education program (IEP) direct services and accommodations. Students who have IEPs require

various services and learning accommodations that are best provided in a structured classroom environment (CHADD, 2016; Reading Rockets, 2019).

When the physical learning environment and support providers are no longer available due to distance learning, the question becomes how are the students' IEP services and accommodations being met, if at all. The special education departments within each school district will then rely on the guidance of their respective state and the federal government to be sure that IEP services can be provided in fear of falling out of compliance (Bar-Lev & Salzer, 2019; Lee, 2020). The goal of this literature review with content analysis was to identify how COVID-19 impacted K-12 public school special education students' mandated IEP services and the possible solutions schools employed to support these students during the early days of COVID-19 and throughout the 2020-2021 school year.

Background

Before the implications of the COVID-19 global pandemic on special education students can be understood, the nature of the synergistic relationship between general education law and special education law must be brought into focus. The current K-12 public education system in the United States is governed by numerous federal statutes which began to emerge in the post-World War II era. The Elementary and Secondary Education Act of 1965 (ESEA; Public Law 89-10) and its subsequent reauthorizations play a major role in the operation of every K-12 school district in the country. The ESEA established a commitment of federal resources toward ensuring that all students be afforded equal opportunity to experience and benefit from public education. In essence, ESEA and its successor reauthorizations along with associated laws govern the operation of K-12 public schools throughout the nation for all students.

All K-12 public schools in the United States that receive federal education funding must operate in a manner that is consistent with the requirements of these laws. The vast majority of federal education laws were written with all students in mind. In essence, education of the entire K-12 student body of the United States, inclusive of all its special populations, is at the heart of these laws. However, for some student populations, there are additional laws in effect. One such group is special education students or students with disabilities. Special education students are a special class of students who were first singled out for special protection with the Education for All Handicapped Children Act of 1975, known more commonly as Public Law 94-142 (PL 94-142). PL 94-142 required all states that accepted federal money to provide equal access to education for all children with disabilities. This law, and its subsequent iterations via the Individuals with Disabilities Act (IDEA; 20 U.S.C. § 1400, et. seq.) and others, makes it mandatory for all schools to provide equal access to education regardless of a student's status as a student with a disability. In other words, students with disabilities cannot be denied access to the specialized educational services to which they are entitled under the law.

Special education laws take provision of specialized instruction to students with disabilities one step further. Students with disabilities are provided an individualized education plan (IEP) that is customized to suit the specific needs of the student (Autism Society, 2020). The IEP is a legally binding, written contract between the school and the student which must be followed. Further, the IEP can only be changed or amended through a detailed procedure that is designed to protect the rights of the student (Office of Civil Rights, 2020).

In times of normal school operation, these federal laws work together in an ongoing synergistic relationship to ensure that K-12 public education access is freely and equitably available to all students, regardless of needs (U.S. Department of Education, 2010). However, at no time prior to the COVID-19 global pandemic had the applicability of these laws been so tested. COVID-19 sparked a unique crisis in K-12 public education, nationwide.

In the early days of the global pandemic, K-12 public schools went into a state of full closure. All schools were shut down for all students. General education students and special education students alike were equally affected by schools being closed (Cerna et al., 2020; Lee, 2020). That is to say, schools were closed for all students for a specific period of time much like when schools close for a few days due to weather emergencies or other local emergencies. Under the federal guidance, when schools are closed for all students, other requirements under said laws may also be suspended for all students. However, as soon as schools reopen for all students, all of the federal laws must be followed (Lee, 2020; Press Office, 2021).

During the COVID-19 crisis, the reopening of schools was geared toward the provision of services to general education students via virtual, hybrid, and other modified instructional formats. These formats might be appropriate for provision of basic educational services to the average student, but these formats presented significant and unique challenges for the education of special education students whose educations are governed by IEPs (Gavin, 2020).

As soon as schools reopened for all students, the existing, pre-school closure IEPs of special education students were required to be followed as written and in the absence of existing or well-thought-out remote learning plans (Gavin, 2020). Students with specialized services including one-on-one work with paraprofessionals or other service providers, nursing care, physical and occupational therapy services, and many other specialized methods of support and instruction were required to restart in a virtual or otherwise compromised environment. These highly specialized and labor intensive special educational services are structured for provision within a typical school environment, not within the individual homes of students nor across an internet connection.

With the virtual and partial reopening of schools, educators were expected to provide the services written in IEPs to students via current instructional delivery methods which could not support such services (U.S. Department of Education, 2020a). As a result, in too many cases, special education students were left without the very necessary specialized services to which they were entitled, thereby opening the possibility of requiring compensatory educational services in the future (Gavin, 2020; U.S. Department of Education, 2020b, 2020c). Thus, for the students with disabilities, the education experience was upended not only in the general education setting as it was for all students, but also in the provision of their specialized educational services mandated by the IEP.

Purpose

The purpose of this scoping literature review was to systematically explore, categorize, and chart the available research to reveal the shortcomings of public K-12 virtual learning of students with

an emphasis on exceptional children and special needs populations. In K-12 public education, the emphasis on supporting these students may be dramatically impacted during unprecedented events, such as a global pandemic. Additional purposes of this study were to define gaps in the current literature, provide a synthesis of insights gained about structures of public K-12 special education services, and to stimulate a potential dialogue among schools, Special Education teachers, and caregivers of special needs students.

Research Question

The research questions allowed for an exploration of available data using a categorical reasoning approach. The research question and subquestions guiding this study include the following:

Research Question: How were special education students or students identified needing assistance as related to their public K-12 school social experiences and performance impacted in receiving the services mandated by their individual education program (IEP) while schools conducted classes via virtual learning due to COVID-19?

Sub Question 1: How were public K-12 students with an IEP affected by the reduction or loss of mandated services by their service provider or special education teacher during COVID-19?

Sub Question 2: What possible solutions were enacted by public K-12 schools to provide services to support students who have an IEP?

Method and Design

The method of this study was a scoping literature review with a systematic content analysis. The research design is appropriate for this study since the topic is of great interest to individuals in the realm of public K-12 education, legal, governmental jurisdictions, professional organizations, medicine, parents, and caregivers of exceptional children and students with special needs. Since the topic zeros in on a specific demographic of students, public K-12, the sheer volume of information on the topic is vast. Therefore, a scoping literature review allows for the researchers to cast a broad net to find applicable resources, then allowing for refinement of specific data that answers the study's research questions.

Procedure and Data Analysis

This literature review was organized using procedures developed by Cooper (1998) to synthesize the literature. Cooper (1985, 1986,1988) previously developed a specific structural framework to organize and categorize literature from various perspectives and then developed a research framework to support synthesis of literature. The Cooper (1998) framework structures a literature synthesis to include directions for how to a) formulate the problem, (b) collect data, (c) judge data for fit or alignment to the purpose of the study, (d) appraise and interpret the data determined to be relevant, and e) categorize, assemble, and present the products.

Formulating the Problem

The problem is that little is known as to the impact COVID-19 has had on services for K-12 public special education students which are required by Federal and state law. Such services may not have been delivered by special education teachers due to restrictions in place for social interaction and personal engagement in closed settings such as schools due to the pandemic. When services and accommodations are not provided based on a student's IEP, the school is then out of compliance, which directly affects the student's education as well as the federal and state funding the school and school district receives to support special education programs.

The focus of the present study was on the provision of required IEP services for special education populations and if K-12 public schools in various regions of the United States were able to meet those specific requirements during the COVID-19 closing of schools. Formulating the problem was conducted by completing a broad, cursory review of the literature consistent with Cooper's Step A (1998). The initial review of the literature revealed the extent of how IEP services and accommodations were and were not met by states within specific regions of the US, the role of individual K-12 public school teachers, parents and guardians, caretakers, and advocacy groups who support special education students. A deeper dive into the literature may be needed when formulating the specific problem since the topic of meeting IEP accommodations in K-12 public schools during the time of COVID-19 was still evolving. More research may be needed to fully understand how the absence of IEP accommodations could be affecting the educational progress of special education K-12 public school students.

Literature Search Procedures

Sampling data collection was completed by incorporating Cooper's Step B (1998). The literature analysis included qualitative, quantitative, mixed methods, empirical research, theoretical and conceptual analyses, and commentaries, as well as literature reviews. Articles and data evaluated were current (2020-2021), and pertinent to the purpose of this study. The criteria of relevancy were defined as related to the study intent and research questions as the search process evolves. The systemic search used databases such as EBSCOhost, ProQuest, and SAGE Knowledge Journals. These databases were selected since various peer-reviewed journals are published on current topics affecting public education. ResearchGate was included as a source for potential articles because researchers often share their work with other researchers via this web-based collaborative. Other modes of a systematic search include specific state department of education websites, professional organizational web-based journal publications, advocacy groups and legal organizations who support the rights of special education populations and specific K-12 students. Specific search terms were generated from keywords or phrases found within the articles and based on the final content analysis. A list of keywords and variations of each were saved for future reference when developing the final manuscript of the study.

Criteria used to determine fit was based on articles were reviewed for relevance for the time period of March 2020 through the end of the 2020-2021 school year, June 2021. Intercoder agreement similar to other such content analysis searches included all three authors who scored the relevancy for the articles to be included based on the search criteria. Those where little agreement was found were removed after sufficient discussion on their possible merit (Anderson et al., 2008; Houchins et al., 2016; Knight et al., 2020).

In an effort to evaluate the COVID-19's effect on the K-12 education sector, this study relied upon federal, state, and professional organization websites as a lens through which the process of responding could be viewed. A preliminary search for federal and national professional organizations guidance for and recommendations to state and local school systems was conducted. In addition, other reputable sources for education related information and specialized resources addressing the needs of students with disabilities were included. Federal agencies' guidance was released early in the pandemic crisis with several updates over time; however, as the length of the pandemic drew on, the guidance from the federal government seemed to decline. As a result, responsibility for handling the crisis in education shifted to the state departments of education followed by the local school systems.

With this shift in mind, this study took an intentionally balanced perspective in investigating the states' issued guidance on providing educational services during the pandemic. States were divided into regions based on the current configuration of U.S. time zones ($N = 22$). States were intentionally selected for inclusion in the analysis by first selecting highly populated states in each region as well as states with smaller population size within the same region. This ensured inclusion of urban, suburban, and rural school districts within each regional sample and in the total sample. Due to large differences in the geographic size of states in each region, the number of states selected from each region varied (Eastern $n = 9$; Central $n = 5$; Mountain $n = 4$; Pacific $n = 4$). The search for states concluded once the data indicated saturation with regard to policies and practices.

Data Evaluation

To effectively develop the literature review, the study included articles based on firsthand experiences, empirical evidence, state department of education data, requirements and recommendations, and records of application or absence of K-12 public special education student IEP accommodations during school closures as the result of COVID-19. Articles were initially reviewed, appraised, and interpreted, as defined by Cooper's Step D (1998), to be relevant for the current study. The criteria related to the study's intent and research questions served in the selection process of evaluating each of the articles collaboratively examined. Based on the evaluation process, essential words or terms were identified and included in subsequent searches (see Appendix) which reduced the total number of articles reviewed to 20 which served as the population for this study.

Sample Selection Process and Parameters

Each of the articles was reviewed for consistency to the study design inclusive of K-12 education, special education services during COVID-19, IEP compliance during COVID-19, population, sample, and results. The abstract or entire article were reviewed to further validate articles for the study sample. From the initial list of 90 articles, 32 articles were selected for more intensive analysis based on consistent fit to parameters of the study. Each team member collaborated in discussions to identify a final sample of articles after an extensive review and discussion based on the same criteria which represented the best fit to meet the goals of this study. An additional complete literature search was conducted six months after the initial search. The subsequent search was used to confirm if no new research on the topic has emerged.

The intent of this study was to review all pertinent articles for relevance on the topic of COVID-19 regarding Special Education compliance of IEP services in public K-12 school settings for the period of March 2020 through June 2021, inclusive of the entire 2020-2021 school year. Since the systematic review of literature was bounded by researchers' choices, there is the likelihood that existing research may have been inadvertently excluded. We, as a research team, value global perspectives, however for the purposes of this study the focus was on U.S. based research due to the relevancy of the context of this study.

Appraise and Interpret Data Relevance

The literature review process, data evaluation, and analysis were conducted incorporating Cooper's Step D (1998). Consistent with established criteria, selected articles focused on aspects of how K-12 public school special education students who have IEP accommodations were impacted when classes were conducted virtually during COVID-19, did these same students see a reduction or loss of mandated services, and what were the possible solutions public K-12 schools employed to provide services to support students who have an IEP. This approach is driven by the intent to learn how COVID-19 disrupted traditional in-person accommodations and services as mandated by IEPs and provided to special education students in public K-12 schools throughout the five regions of the U.S. Descriptive categories were developed for the initial analysis of each article: topic, research design, population, and results related to the research questions.

Findings

State and Regional Resources

As COVID-19 spread across the nation, K-12 public schools were forced to make difficult decisions to close their doors and temporarily suspend education services for all students in an effort to protect the health and safety of students and employees alike. Widespread shutdowns across the economy also affected the support services needed to keep schools up and running. While local school systems began making their own decisions to close their doors in late February and early March of 2020, the federal government did not offer guidance to the state and local boards of education about how to provide support to students with disabilities until March 12, 2020 (U.S. Department of Education, 2020a), March 21, 2020 (U.S. Department of Education Office for Civil Rights, 2020b), and September 28, 2020 (U.S. Department of Education Office for Civil Rights, 2020c). At best, the federal guidance and the releases that followed were confusing (Gavin, 2020). In many instances, legal professionals and education organizations attempted to fill in the gap left by the federal government in an effort to advocate for the educational protections afforded to students with disabilities across the nation (see KSB School Law, 2020; MBM Law, 2020; National Association of School Psychologists, 2020). This gap in communication left state and local boards of education to figure out best practices to follow on their own.

As time went on, state departments of education began to fill the void left by inadequate federal guidance and support systems. State departments of education took it upon themselves to devise best practices for their school districts that they believed would be aligned to the requirements of the federal law and state regulations. In some states, state boards of education placed the burden

for these decisions on the local school districts. This uncoordinated process produced tremendous variability in the level of education and support services that were afforded to students with disabilities.

As the states' individual departments of education took up the slack for federal government mismanagement, the landscape of education resources became increasingly confusing and disjointed. State boards of education and other state-level education agencies pushed out a tremendous number of resources to local education agencies, educators, and parents. However, these abundant resources were rolled out via haphazard online systems that were poorly designed and lacked a user-friendly interface. Hundreds, if not thousands, of websites and loosely connected communication networks served as the base for disseminating information and resources that should have been beneficial to educators and parents alike. Yet, these systems were often confusing and overwhelming to those who were in most need of the support. At a time when all education was virtual education, even the best designed systems lacked an easy to use and intuitive interface that is a prerequisite of success for expert and novice users alike.

Synopsis of Events

Stage 1: Chaos and Closure

Awareness of COVID-19 was emerging late in 2019 and the beginning of 2020, raising concern not only in the United States, but also around the world. Schools were not sure how to prepare for the possibility of a pandemic reaching the shores of the United States and the potential impact the virus may have on educating students. When COVID-19 gripped the West Coast, schools had to determine, based on the guidance of their respective governors and state boards of education, the process of closing schools. Most school districts in the states of Washington, Oregon, and California thought they would be closed for a few days or up to a couple of weeks (Modan, 2020). During this time, school districts also had no distance learning options in place to continue educating their students. Even though all students in K-12 public schools were directly impacted by the school closures, the student population that was affected the hardest were students with special needs. As the populace were being infected with COVID-19 at an unprecedented rate, by March 2020 school closures were in place for more than three quarters of states and Kansas was the first state to officially announce that school closures would take place until the end of the school year (Modan, 2020).

The dramatic impact of school closures on students with special needs had parents questioning if and how services would be provided, especially for students with mental health, learning difficulties, and those requiring outside providers such as occupational therapists (Becker et al., 2020). Taking care of specific student populations was not a consideration of school districts, instead a focus was on how to move from an in-person teaching to distance learning and the challenges teaching virtually would bring (Modan, 2020). School districts were concerned with having the bandwidth to support the majority of their student populations, especially low-income school districts and communities, with technology, internet access (Grant, 2021), or having packets of schoolwork available for distribution. An additional issue that impacted teachers, including special education providers was how to provide virtual support for students when not having the experience of teaching online or resources (Modan, 2020; Tremmel et al., 2020)

Genztel feared, as the executive director and CEO of the National School Boards Association, schools will face shortages of staff to support students with special needs including "occupational therapists, psychologists, speech therapists and other specialists" (Modan, 2020, para. 24). Besides the concerns with providing the services, maintaining compliance of IEP meetings and other IDEA timelines was an issue that would need to be addressed in a creative and coordinated effort between service providers and parents (Grant, 2021).

Stage 2: The Virtual Pivot Begins

By the end of March until mid-June 2020, school districts throughout the United States were trying to develop processes to assist students in acquiring technology to support virtual learning. This challenge was magnified in Title 1 schools and low-income school districts where technology such as tablets and in-home based internet is seen as a luxury (Grant, 2021). The concern that became apparent to special education teachers, service providers, and parents or guardians of students with special needs is that of meeting the curricular needs of these students while distance learning and in holding virtual IEP meetings (Barack, 2020) would necessitate dedicated resources provided by the school (Tremmel et al., 2020). How specific IEPs services and accommodations were to be met was a driving concern for both special education departments and parents/guardians. The IEP is cumbersome at best and difficult to navigate (Barack, 2020) leaving schools trying to direct and align specific resources to students with special needs that may be required based on their diverse learning styles (Davis, 2021).

The inclusion of equity and accessibility of requisite resources to support student learning accommodations must be considered (Pittman et al., 2021). Special education teachers and specialists needed to quickly learn various platforms and software suites such as Google and Microsoft to find specific tools to support their students. Those built-in tools include Read Aloud, text-to-speech, and assistive technologies such as closed captioning. To support their students, special education teachers were having to learn how to teach "on the fly and at a brutal pace" (Schlichtmann as cited in Jacobson, 2020, para. 3) in the attempt to minimally meet the accommodations and services set forth in the students' IEPs to try to maintain compliance.

Educators, recognizing special education students would need extensive academic support especially during distance learning when their paraprofessional may not be physically accessible, expressed the possibility that special education students, who have highly individualized needs, may feel the impact of learning loss at a greater rate than the general education population (Barack, 2020; Jones, 2020; Lesh, 2020). Even though, educational settings are still required and responsible for meeting the tenets of IEPs under the Individuals with Disabilities Education Act (IDEA) by providing free and appropriate public education (FAPE) regardless of the instructional approach to students with special needs (Arundel, 2020a) the challenge of doing so in a manner that would be similar to in-person learning proved to be daunting. Many school districts throughout the United States were still trying to find a way to support the general education student population and relied heavily on special education teachers to come up with support systems on their own with little, if any, assistance from their school's administration or district (Jones, 2020). When special education teachers needed to shift to online learning, the IEPs of their students needed to be updated to accommodate the modality, with parental agreement to those changes, in which the students were being taught (Jones, 2020). One challenge faced, arranging for parents or guardians to meet with their student's special education

teacher online to discuss modifications to the IEP. The reason, not all parents' or guardians' households had access to computers at home, thus a digital divide was evident (Aissaoui, 2021; Jones, 2020).

Student educational achievement and success is often linked to the support systems available, inclusive of parental or guardian involvement (Chen, 2020). When COVID-19 forced the closure of schools, the home-based support system of parents or guardians were thrust into an unfamiliar role, the primary educator of their students. The responsibility for teaching special education students during COVID-19 early on in the school closures period fell largely on the shoulders of the parents or guardians (Garbe et al., 2020). Accessibility to support student learning who have IEPs was one of the struggles and challenges parents and guardians faced (Garbe et al., 2020). In part, this was due to the capacity requirements of students with special needs that could not be met by their teachers because of inadequate infrastructures, resources, and support from schools (Garbe et al., 2020). The burden to educate these students from a traditional classroom setting to distance learning shifted to the students' household; however, parents and guardians were not equipped to support their student's educational needs and accommodations due to the "lack of time, content knowledge or pedagogy, communications, and/or resources" (Garbe et al., p. 59).

Stage 3: Preparation for Combined Virtual and Face-to-Face Reopening

The first few months of school closures for parents and guardians of special needs students proved to be challenging (Jacobson, 2020). Parents and guardians were placed in the position to serve as their student's special education teacher and service provider. When students were not able to follow established daily routines which were set in place by their service providers in a learning environment other than the classroom, many of these same students struggled academically, socially, and behaviorally (Jacobson, 2020).

Due to school closures, students with special needs could have significant learning loss which will require "more intensive services that they didn't require" (Bateman as cited in Jacobson, 2020, para. 6) prior to the global pandemic. Although flexibility has been granted by the Department of Education, under DeVos, to help schools transition (Modan, 2020) to in-person and hybrid learning, concerns still exist regarding accessibility of support services. DeVos noted that Congress would not need to waiver other provisions (Modan, 2020) to assist schools as they put in place services to support students with special needs when schools reopen for the 2020-2021 school year. Thus, the burden is placed on schools to try to adhere to the IEP timelines while developing plans to fully transition to online learning (Jones, 2020). The difficulties for school districts lie in finding solutions for the social, emotional, and behavioral functional services their students with special needs require. Therefore, school districts were placed in a position to dissolve traditional means of communicating with parents/guardians and to accelerate the development of robust collaborative networks with families and community partners to assist students who require specialized services according to their IEPs (Modan, 2020). To assist in the facilitation of virtual IEP meetings, beginning in the Fall of 2020, recommendations were made to school districts to send prerequisite materials in advance of the IEP meetings to parents/guardians to review and to encourage the use of cameras during the meetings along with the use of screen sharing to engage all parties to increase the productivity of the virtual IEP meetings (Barack, 2020; Jones, 2020; Nissman, 2020). Understanding how to navigate virtual

services could, in the long run, improve accessibility to providers and improve the delivery of services for students when schools are due to reopen for the 2020-2021 school year.

In preparation to returning to in-person or hybrid learning, schools will need to "evaluate the kids like crazy for serious regression" (Bateman as cited in Jacobson, 2020, para. 6) in order to determine if current IEP accommodations are valid or if those accommodations will need to be modified. In such instances, both parents/guardians and school districts will need to open the lines of communication and collaborate to make sure students with special needs, on a case-by-case basis, have the resources and accommodations in place to fully support the learning needs and meet the deadlines set forth in the student's IEP (Barack, 2020; Modan, 2020). To exacerbate the situation, universal guidance offered by the Department of Education falls short, relying heavily on state education departments or governments to provide instructions on how schools should move forward to support students with IEPs. The approaches for how to support effectively and efficiently students with special needs vary from state to state and district to district. For example, the California 2020 Budget Act included a reporting requirement if a school was to be closed for more than 10 days. Special Education teams would need to outline in detail how students who have IEPs would receive individualized instruction and services (Arundel, 2020b). The state of New Hampshire enacted an emergency order which required schools to hold within the first 30 days of the 2020-2021 school year IEP meetings for all qualifying students (Arundel, 2020b). The purpose of the meetings is for the IEP teams to determine if additional services will need to be provided to students based on the regression of skills or the absence of such services during COVID induced school closures (Arundel, 2020b). Vermont required by September15, 2020 individual service pages added to student IEPs detailing how services would be provided if the student were to continue with online learning, attend in-person, or a hybrid learning model (Arundel, 2020b).

While some students with disabilities thrived during COVID induced distance learning, other students need physical classroom instruction to obtain the services to deter learning regression (Arundel, 2020b). The Office of Civil Rights (OCR) noted that schools could be "required to provide in-person instruction for students with disabilities based on their individual needs" (Arundel, 2020a, para 2). The reopening of schools to support students with special needs will need to consider the welfare of not only the students, but also the teachers and support providers before moving forward to in-person instruction. A concern was expressed by Almazan (as cited in Arundel, 2020a), legal director for the Council of Parent Attorneys and Advocates Inc., "we know students with disabilities are disproportionately affected by distance learning" (para 8). Therefore, schools still need to uphold their responsibility to execute the Individual with Disabilities Education Act (IDEA) and IEPs by providing Free Appropriate Public Education (FAPE) with high fidelity regardless of how services and curriculum are delivered or the state guidance that is provided (Arundel, 2020b). Saideman (as cited in Jacobson, 2020) acknowledged the problem is a "public health emergency" (para. 7) that will require coordination and creative solutions between parents/guardians, special education teachers, service providers, and school districts.

Stage 4: Blended Reopening Phase

Stage 4 occurred in a four-to-six-month period arriving in the Fall of 2020 through Winter 2021, a period where special education found itself wallowing away from a host of pandemic bound

challenges for general education, to a conundrum now underlined with a sense of immediacy. In the Fall of 2020, a Tufts University report said, "parents of special needs children have struggled through a trial-and-error process to find what works—and what doesn't—to encourage their children to engage with virtual education and/or in-person education that looks much different than it did before COVID-19" (Nelson, 2020, para 3). The stance was taken from Leadnra Elion, a lecturer in the Eliot-Pearson Department of Child Study and Human Development. "Elion said she understands that schools are overwhelmed as they adapt to virtual learning and enhance safety measures inside school buildings to comply with COVID-19 guidelines" (Nelson, 2020, para 13). Nelson's article documented the current state of IEPs that for most states were problematic carried out online.

Websites become the preferred choice to quickly disseminate the most important requirements typically associated with providing continued services in the vacuum of prospective online meetings and the digital divide's firm grip among many families struggling not only to connect to the internet, but to integrate collaborative platforms and the physical or intellectual challenges so their special education students were able, let alone willing, to obediently follow along. For example, in Michigan, the Michigan Department of Education (MDE) had formally provided its recommendation on best practices and efficacy for preparing special education students, administrators, and faculty to return to school in August 2020.

According to a 17-page guide none of the 6 priority recommendations were meant to subvert any legal advice, but practical measures in consideration of the best science with respect to social distancing, sanitizing, and practices shared by all returning schools on physical premises. With regard to the special education students themselves the number 1 priority was to assure such students continued to qualify for a Free Appropriate Public Education (FAPE). The second priority is to be certain that each special education student FAPE is based on an in-person (brick-and-mortar) setting and that consideration of any remote serving strives to meet the guidelines. A third priority is to assist the parents via counseling and training to support their special education student and the necessary IEP requirements.

> 34 CFR § 300.34 of the IDEA states that related services include parent counseling and training. The purpose of parent counseling and training is to assist parents in acquiring skills to support the implementation of children's IEPs. In some cases, this may involve helping the parent to gain skills needed to support IEP goals and objectives at home. (MDE, 2020, p. 7, para 3)

The fourth priority included a formal IEP assessment, followed by priority 5 to review the actual impact of the COVID-19 pandemic to determine if recovery services were needed by December 2020 and to priority 6, prioritize those recovery services. The guide acknowledged that students may have experienced trauma from lack of physical school activities and each district must monitor what it can to assess damage. In nearby Indiana, the requirements to serve those with special needs in public education had not changed under the many challenges of remote learning that COVID has spurred. According to Michael and Kerr (2020),

> The reassuring thing for families is that while the world of education has changed, the laws as to what must be provided for children with special needs have not. The

> Individuals with Disabilities Education Act (IDEA) is a federal law that requires appropriate education plans and supports for children with special needs. Its Indiana-based counterpart is Article 7 of the Indiana Code. (para. 3)

Thus, the assurance is still on the public schools which must provide the technology for special education students to be able to communicate between administrators and resource teachers, for example. And if students need paper and traditional books, those were to be delivered to them. Any more intensive student needs where the school cannot serve, the school must provide a private service provider. The Indianapolis Bar Association contributors maintained that accommodations from one special needs student to another can vary considerably including how each student accepts the use of wearing a mask in person. Moreover, what each school system considers enough protection can vary from one to another and each requires a different student intervention even before the basic learning objectives are the focus of that student's IEP time.

Above all, says Michael and Kerr (2020), parents must communicate to the school about their child's needs. Nevertheless, states are pumping out resources for teachers on websites - extensive supply of information and support materials. But a special education family crush persists. There is an impending and persistent question that continues throughout the educational pandemic landscape where we posit out of sight out of mind, how does delaying the face-to-face reopening influence student progress and response from organizations/government?

Much depends on the voices of special education parents and the various state laws that could potentially cost districts in potential lawsuits for lack of services or services so watered down just keeping touch becomes a challenge. As the challenges of the Fall of 2020 continued to burden special education departments returning to school nationwide, Education Dive (2020) reported that providing a *free appropriate public education* amid COVID-19 has been a staggering challenge for students with special needs. "Under the Individuals with Disabilities Education Act (IDEA), these students are guaranteed the right to a 'free appropriate public education.' Providing those services in remote environments for students with a vast range of special needs" (Education Dive, 2020, para 2).

Accomplishing that objective is a staggering proposition. The article recounted six published stories it offered throughout the nearly first three quarters of 2020 on IEP implementations, how schools can prioritize reopening based on special needs, supporting IEPs remotely, the need to create certainty and clarity in delivering services remotely, ed tech coalition for special needs students, and the initial school closing in almost all states. Under the leadership of Betsy DeVos, the Amway family dynasty heiress who held the United States Department of Education directorship in August 2020, Vos asked for waiver requests to provide flexibility for timelines under IDEA. "But the flexibilities called for by the U.S. Department of Education don't completely align with what education leaders had conveyed were necessary" (Modan, 2020, para. 2). But the measure was only for toddlers who needed evaluations. Ultimately, local districts would continue to progress with provided services virtually as most continued to struggle through new realities.

Due to a variety of conditions, local school district choices, public sentiment ready to accept the responsibility of safety measures needed, as well as demand, the Southeast region was among all

the regions ready to return to physical in-person general education instruction. Thus, the Southeast was among the first to accommodate IEP type students face-to-face more readily. We speculate that well distributed and available information helped to accentuate the return. For example, the widely publicized COVID-19 safety telephone hotline, an HTML guide to return aboard the GeorgiaInsights.com website, and the power of local community stakeholders each contributed to such a demand (GeorgiaInsight.com).

Throughout Stage 4 several observations persist. The digital divide continues its grip not only for lack of Internet access and proper computer equipment, but for parents, caregivers, and significant others who must accompany their special education student during online collaborative sessions, dealing with wanky connections, camera, and microphone issues as well.

Stage 5: Full Reopening Phase

As the winter of 2021 progresses the vast majority of schools are at or near full face-to-face, but the lag in reopening still looms large in sprawling urban areas such as New York City, Chicago, Los Angeles, and Atlanta. Even so the openings remain fragile and continue to be compromised by students, faculty, or staff that test COVID-19 positive. For example, California braced for a surge in the needs of special education students by enacting an assembly bill (AB), AB- 86 COVID-19 Relief and school reopening, reporting, and public health requirements. California Governor Newsom signed California Assembly Bill-86 dubbed Disability Rights California 2021 was signed into law on March 5, 2021. “AB 86 has new requirements for learning recovery and school reopening. These new requirements encourage schools to provide in-person instruction to students (this includes hybrid models)” (Disability Rights California, 2021, para 3).

A Learning Recovery Fund totaling about 4.6 billion must be used by schools to develop plans for learning loss and must support students with disabilities (Disability Rights California, 2021). A laundry list of the types of services schools can offer in the wake of COVID-19 is revealed. From tutoring and mental health services to school meals and developing community learning hubs with high-speed internet access, for example. This includes the requirement of a public meeting to adopt an Expanded Learning Opportunity grant plan for fund use (Disability Rights California, 2021).

As the traditional 2020-2021 public school year neared its closing in May 2021 California provided a good example of what it took to return to face-to-face classes and some of the many obstacles that continue to stand in its way. Staff shortages, lack of data, particularly on the effectiveness of what can help with the return to in person classes, and a backlog of IEP evaluations kept most districts limping along. For the most part as Jones (2021) reported,

> For students with disabilities, the pandemic has been a landscape of extremes. Some have thrived with distance learning and want to continue in the fall, while many have languished without the in-person support of therapists and teachers and have lost ground academically, socially, and emotionally. (para. 1)

Some bright spots, if you will, stood out along the Stage 5 reopening in certain geographical areas. For example, the South and Central Midwest states moved faster through stages. Yet all regions were mired with budgetary and support issues. Special education students seemed to take

a back ride before general education challenges were met. In some cases, state policy dictated school system policy. A good metaphor to sum up reaching stage five can be likened to building the plane while flying it. The best word that continues to describe the sign of the times, burnt out. Teachers, faculty, staff, parents, and students alike, each weary of not only the day-to-day challenges of special needs students, but each wondering if any signs of progress would yield permanent intellectual and growth results and the ramifications of delayed learning and the ever-present force of those who might be held back.

Discussion

This study revealed that the pool of existing literature about the direct impact of COVID-19 on IEP services for students with special needs was limited. While these authors recognized the depth of literature available on the impact of COVID on distance learning of the general education population and the potential consequences, the same could not be said for the special needs population of students. For students with disabilities, the direct impact of lost school and service time is likely to be skills regression, failure to recoup lost skills, as well as loss of progress in learning. Thus, the potential impact of COVID-19 school closures and disruptions in education is likely to run deeper and longer for these affected students.

This study raises important questions for public K-12 schools and the contexts in which students with special needs are obtaining services as mandated within IEPs during a time of crisis. In other crisis events, such as natural disasters, contingency plans are in place within the school and/or school district to support students with special needs as to mitigate the length of time in which the disruption occurs. No such emergency contingency plans are in existence for public health related disruptions as shown by findings of this study.

Beyond the services as mandated within the students' IEPs, another consideration raised by the current investigation is the social, emotional, and behavior (SEB) functioning losses that may have occurred during the global pandemic. The implications of school closures and disruptions extend far beyond the academic performance of students with disabilities, many of whom have functional as well as social, emotional, and behavioral deficits that impede their academic progress. For these students, if the strides made in SEB prior to COVID are lost completely, it remains unknown what additional services and supports will be needed to recoup those losses if it is possible to recoup them at all.

Implications

During an unforeseen event, such as COVID-19, public K-12 educational systems were scrambling to find a means to keep classrooms open virtually to provide students with a meaningful classroom experience. Within this same context, public K-12 schools did not adequately address or robustly put into place the required services for their exceptional students and students with special needs. When school districts do not have the forethought to anticipate the unknown or immediately address the issue at hand, this specific population of public K-12 students are left to fend for themselves. The immediacy of special education services was not being addressed. Therefore, a disruption occurs in the mandated services these students so desperately need which affects not only the student, but also the special education teachers, paraprofessionals, parents, and caregivers.

Limitations

The authors recognize the use of a scoping literature review may affect the outcome of the results of this study that is bound by a specific contextual time frame based on a global event. For this study, the boundaries of the literature review included all known research found from March of 2020, when the majority of public schools began to close for face-to-face instruction, until June 2021, the end of the 2020-2021 school year. This specific study, the authors believe, illustrates how a literature review can be executed to find specific trends, themes, and current relevant research on the topic of the execution of services as mandated in IEPs of students with special needs within specific regions of the U.S. and the five identified stages as discussed in the findings. The limitation for this specific study is the number of peer reviewed journal articles available on the topic; therefore, the dataset needed to be expanded to include other sources of viable research and information based on the parameters of the study. While the authors of this study believe the methods were exhaustive at the time of this publication, there is the possibility that other relevant studies may have been published.

Future Research

Future studies could investigate how distance learning during the time of COVID affects student performance based on the rollout of closure and reopening plans, if mandated attendance was enacted, and the possible differences in services available and executed based on school location of an urban, suburban, or rural setting. Additionally, further research is likely warranted to investigate the connection between state, regional, and local crisis management plans and how those plans are disseminated to the local school districts in a coordinated effort to determine the effectiveness to support students with special needs.

Within the literature review, several articles (Barack, 2020; Jones, 2020; Nissman, 2020; Tremmel et al., 2020) focused on the facilitation of IEP meetings virtually when possible. Follow up research may be necessitated to disseminate the possible benefits of moving IEP meetings to a virtual environment to improve compliance and communication with all parties to support special needs students. As there were with virtual instruction for students, it will take time and a coordinated effort on the part of schools and educators to properly train and support parents in order that IEP meetings are accessible, welcoming environments that are designed for the benefit of the student.

Ultimately, for the majority of all public-school districts, lessons learned or improvements will not be evident until the 2021-2022 academic year has time to adapt during the new face-to-face realities and those districts are simply fed up with online alternatives. This leaves the current state of education during COVID-19 and beyond ripe for future research. Suggestions for such research include: (a) investigation of U.S. regional (east, central, mountain, west) or locality (urban vs. suburban vs. rural) differences in student performance outcomes; (b) long-term vs. rolling school closures effect on student performance; (c) virtual vs. hybrid vs. face-to-face instructional delivery effect on student outcomes; (d) differences between mandatory attendance and non-mandatory attendance states/districts; (e) regression vs. failure to make progress and the need for compensatory educational services; (f) impact of losing performance data creating gaps in teachers' data-driven instructional planning practices; (g) impact of delayed access to service eligibility during initial placement and re-eligibility determination; (h) performance losses beyond academics including social, emotional, behavioral functioning.

Conclusions

For this specific study, we concluded the literature review in June 2021 since the vast majority of public K-12 schools had ended the 2020-2021 school year. These same school systems were starting to anticipate how and when face-to-face instruction would occur and what the classroom would look like for students in the upcoming 2021-2022 school year. Based on the findings of this study, the delivery of instruction and services for students with IEPs would not appear the same for the 2021-2022 school year. School districts are struggling to re-open schools safely for the general education population and the thought of how to support students with special needs may not be a top priority.

As school districts and educational agencies continue to grapple with the effects of the pandemic, they must consider the most vulnerable populations, students with special needs. The perspectives of this population of students are essential in helping to learn what is needed to avoid a disruption of educational and support services. The key is to continue to work towards understanding the differing circumstances of students to help them be successful in the event the services and learning opportunities they know are shuttered.

Finding ways to address what school districts need to prepare for future events requires a continuous examination to assess what happened during the COVID-19 pandemic. The systems most school districts have in place to deal with natural disasters should be developed further in anticipation for a future traumatic event that cripples or shuts down in-person learning. While governmental agencies at the state and local level and school districts can use the findings from this study to continue to support students with special needs through the presence of the pandemic, the results might be able to shed light on programs, processes, and services that can be improved and implemented during 'normal' times and in future states of emergency.

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Appendix

Primary and Secondary Search Terms Used for Study

Special Education and COVID-19
Special Education
Special Needs Population
Exceptional Students
Exceptional Children
IEP services
Special Needs
COVID
Special education services
Student Disabilities
K-12
Public Schools
State Departments of Education
US Department of Education
Compliance Issues during COVID
Compliance
Virtual, Distance Learning
State guidance on special education services during COVID
State Department of Education guidance on special education services during COVID

Experiences of Special Education Teachers in New York State During COVID-19 Remote Instruction

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Abstract

This study documented the experiences, challenges, and perspectives of special education teachers in New York State during the COVID-19 period of remote instruction in the spring of 2020 and during the 2020-21 school year. An invitation to complete an online survey about their experiences was sent to a random sample of special education teachers. The responses from 38 participants addressed areas such as relationships and communication with families, technology integration, student success, student engagement, and the extent to which the mandates of students' Individualized Education Plans were able to be met. Many of the participants reported on both the challenges and successes they had with technology; this included some new teaching techniques and technologies that they planned to continue to use after returning to in-person instruction. While they dealt with a variety of challenges, the teachers' actions demonstrated professional competence and integrity during this period.

Keywords: special education, COVID, remote instruction, teacher integrity

Experiences of Special Education Teachers in New York State During COVID-19 Remote Instruction

As a result of the COVID-19 health crisis, teachers and students were, almost overnight, expected to teach and learn remotely. Special education teachers working with students already experiencing challenges in school, found themselves adjusting their practice to address a new range of issues from technology access to stress in their new environments, new modalities and even loneliness. The purpose of this study was to document the experiences of special education teachers in New York State (NYS) during the COVID-19 period of remote instruction in the spring of 2020 and during the 2020-21 school year. Teachers responded to an online survey during the summer of 2020 and a subset also responded to a survey in February 2021.
Teachers who work with students with disabilities are required to deliver specialized services included in the students' Individualized Education Plans (IEP). An IEP, the legal document mandating specific parameters of service for students with disabilities (Individuals with Disabilities Education Act, 2004), stipulates student learning goals as well as details of accommodations, modifications, and related services to be received. This document is typically managed by special education teachers. Service to the IEP process, teacher identities, and a sense of integrity to deliver the stipulations of the IEP frame the decisions and actions of special education teachers. During the crisis teaching period of March 2020, teachers approached students and families in new ways, pivoting their instruction, but not their commitment to students.

During the period of remote instruction in Spring 2020, all teachers faced challenges pivoting to a new mode of instruction with almost no warning. These challenges were related to curricula and learning goals, and the students' safety, security, and health. However, special education teachers faced challenges meeting the individual needs of their students and mandates for service delivery as delineated in the legal binding IEP document.

In addressing these challenges, a multidimensional understanding of their teacher identity was evident across their teaching decisions. Components of teacher identity include motivations to teach, self-efficacy beliefs, a sense of responsibility, commitment to teaching and perceptions of expertise (Berger & LeVan, 2018). An understanding of special educators' professional identities similarly revealed this complexity of teacher identity (Berger & LeVan, 2018) and inward focus as problem-solvers and agentic forces in their teaching practice (Waldron, 2016). During crisis situations specific components become more salient than others, and integrity, ethics or a sense of responsibility are evident in the face of challenges (Mintrop & Zane, 2017). Many special educators exemplified the principles of working with exceptional children identified in the Council for Exceptional Children's Code of Ethics, such as: "Maintaining challenging expectations for individuals with exceptionalities to develop the highest possible learning outcomes and quality of life potential in ways that respect their dignity, culture, language, and background," "Maintaining a high level of professional competence and integrity and exercising professional judgment to benefit individuals with exceptionalities and their families," and "Protecting and supporting the physical and psychological safety of individuals with exceptionalities" (2015). The principles in this code exemplify the actions and intentions of the special education workforce ideally and in practice as identified by the largest professional organization for special educators.

As educators shifted to remote instruction, we noticed increased social media conversations and new groups for educators (e.g., Facebook, Twitter). In these groups and conversations, special educators shared innovative uses of technology, support for one another, and concerns and plans for implementing effective educational practice and an ethic of care for their students. We sought to learn more about their approach and perspective. We wondered how their practice was affected amidst reports of unevenness of service and contact with students with IEPs.

Special Education During COVID-19

Around the world, educators of all kinds had to adapt to a new kind of teaching as the pandemic forced schools into remote instruction. Of course, a commitment to student success is not limited to special education teachers; teachers around the country and the world demonstrated that even with a lack of preparation in online teaching, they felt an obligation to successfully teach their students given their current circumstances (e.g., Gudmundsdottir & Hathoway, 2020; Landicho, 2021; Ofsted, 2021). In interviews with 26 elementary educators from Central America, Mexico, US mainland, and Puerto Rico, Atiles, et al. (2021) found a common theme of dedication among the teachers, but at the same time they were concerned for their students' and families' mental health and well-being, including food insecurity.

With the shift to remote instruction, there was particular concern for how special education services would be delivered remotely, especially with little time to prepare (Mitchell, 2020). Because it was a challenge, some districts focused on core instruction for regular education

classes, while paying little attention to how to tackle the more complex challenge of remote instruction for English learners and students with disabilities. Burkett and Reynolds (2021) pointed out that because states are required to offer equivalent educational opportunities according to federal law, this inattention to special education could lead to possible legal issues and "unintentional discrimination" and for districts that were not delivering the mandated services to students with IEPs.

Even as districts faced issues of how to deliver services, teachers kept trying and many of them found considerable success. Teachers reported using a variety of technological tools to reach their students and students' families (Davis, 2020; Atiles, et al., 2021). For many teachers, these tools were new to them, but they planned to continue using some of the technology after a return to the classroom. Some of these tools had advantages over their traditional instruction, for example: self-pacing (Davis, 2020).

Other Challenges

Teachers faced many challenges, especially during the beginning of the pandemic. Some of these challenges centered around the actual delivery of remote services. In addition to learning new technology, more than half of the educators had internet connectivity issues that limited their ability to teach. Even when the technology was working, there were disadvantages related to keeping students' attention while online and not being able to document the delivery of certain services (Davis 2020).

Many teachers, including special educators, recognized issues of fairness around remote instruction. Schuck and Lambert (2020) interviewed two special education teachers about their experiences during emergency remote instruction in spring 2020. Their responses centered around equity, particularly access to technology, students' support at home, and students' ability fully participate in distance learning.

Integrity and Special Education Teacher Identity

Crisis remote teaching resulted in inadequate and ineffective service delivery to support IEP learning goals and mandated modification and adaptations of instruction. However, perspectives of what aspects of student experience were most salient at that time, may have extended beyond IEP goals to address new concerns including social and emotional needs. Mintrop and Zane (2017) examined evidence of integrity inspired agency required in strained or crisis situations on performance to meet standards of practice, among special educators. Public integrity included attention to obligations of office, personal integrity, attention to client needs, and prudence (Dobel, 1999; Mintrop, 2012). Considering this conceptualization of integrity, many special educators may have been more likely to prioritize students' IEP goals and methods of collaborating with parents to provide adequate instruction while addressing the added factors affecting their students. Achieving integrity likely initiates interpretations of obligations and the tension between "individuation" and standardization" to promote equity of experience and address new and different student needs (Mintrop & Zane, 2017). These teachers may be most likely to innovate and find new methods and modalities for the delivery of services to many students to engage in a practice of integrity that aligns with their teacher identities as special educators.

Purpose

The purpose of this study was to investigate the experiences of some special educators in NYS, the epicenter of the COVID-19 crisis in Spring 2020 (Center for Disease Control and Prevention, 2020). Struck by the innovation we saw in online group conversations of special educators, we sought to further understand their instructional experiences. We documented how they delivered special education services and what challenges they faced, as well as their perceptions of the success of their efforts. We surveyed special education teachers to identify innovative ways that they delivered services, the challenges they faced, their perspectives on success, and the fidelity of implementation of IEPs during remote instruction. We emailed a link to a Qualtrics survey, in summer 2020, to a random sample of special education teachers, and we sent a second survey in February 2021 to the subset of those teachers.

We hypothesized that special education teachers would demonstrate integrity and commitment to their students both in consideration of their students' IEPs and addressing new and different issues not accounted for in the federal mandate, revealing some tension between standardization of service and the individuation called for in IEPs (Mintrop & Zane, 2017). We sought to answer the following research questions about remote instruction:

1. How did special education teachers deliver remote instruction during the spring 2020 period of emergency instruction? Specifically, how did they attend to the requirements of a student's IEP?
2. What were the successes identified by special education teachers?
3. Where were the challenges to instruction identified by special educators?
4. How were special education services delivered in the 2020-21 school year, in general, and compared with spring 2020?

The first survey occurred in summer 2020 to capture immediate thoughts on how special education services were delivered during remote learning, with a follow-up survey in February 2021. This work was part of a larger study that included interviews with several special educators throughout the next school year.

Methods

Participants

The participants were special education teachers in inclusive settings in NYS public schools in June 2020 who delivered services during the initial period of emergency remote and worked at the same school district in the 2020-21 school year. In the initial survey there were 38 teachers who have an average of 12.8 years in special education, with some as few as 2 and some as many as 25. They taught all grades from pre-K to 12 and served in a range of capacities and special education placements, including resource room, consultant, and co-teaching. Of the original 38 teachers, only 8 completed the follow up survey in February 2021.

Instrument

The survey instrument was developed based on a review of special education teacher social media discussion boards (e.g., Teaching through the 2020 Pandemic, Special Education Teachers, and SPED Ahead). In addition, we conducted a pilot interview with a special

education instructor. Her experiences helped us develop the themes to cover in the survey and determine where to ask closed- or open-ended questions. See Appendix A for the list of items for survey 1. The second survey was a subset of survey 1 items, with questions about how things had changed in the 2020-21 academic year (see Appendix B).

Procedure

Because the re-opening of NYS schools was to happen according to economic region (NYS, 2020), cluster sampling by region was used, whereby school districts were randomly selected within each region, and email invitations to participate in the survey were sent to special educators in those selected districts. The purpose of this selection procedure was to ensure that we had participants from different regions if those regions returned to in-person schooling at different times. However, in April 2020 when we designed this plan, we did not foresee how long the shutdown would last and that even in Fall 2020 much instruction would still be remote. The first survey was administered through Qualtrics in summer 2020, with follow-ups in February 2021. Participants were asked if they wished to be contacted for follow-up surveys. Although over 30 indicated a willingness to complete a second survey, only 8 completed the survey when requested in February 2021. We analyzed the survey responses both quantitatively and qualitatively. In addition to documenting challenges and successes related to remote special education instruction, we looked for changes in the special educators' behaviors and attitudes between teaching in spring 2020 and the fall / winter of the 2020-21 school year. We also consdidered how the special educator delivered services in the 2020-21 school year, whether in-person, remotely, or both. The study was approved by University at Albany's Institutional Review Board and all participants provided their informed consent.

Results

RQ 1: Special Education Services During Emergency Instruction – Spring 2020

Services Delivered

In NYS in spring 2020, all public-school instruction was remote. Special educators needed to adapt. They used a variety of technology to teach classes, meet one-on-one, and deliver services as mandated by students' IEPs. Table 1 indicates the percentage of teachers who felt they had the ability to deliver a specific service or type of instruction, as asked in question 21 from the survey (see Appendix A).

Table 1

Frequency (Percentage) of Ability to Deliver Services

	Ability to Deliver		
Service	**Yes**	**No**	**NA**
Modification of student written work	23 (82.14%)	5 (17.86%)	0 (0%)
Small group instruction	20 (68.97%)	7 (24.14%)	2 (6.90%)
One-on-one support	26 (92.86%)	1 (3.57%)	1 (3.57%)
Text-to-speech and speech-to-text technology	17 (60.71%)	4 (14.29%)	7 (25.00%)
e-readers	14 (51.85%)	4 (14.81%)	9 (33.33%)

Specific reading materials (such as leveled, culturally relevant, or curricular)	24 (85.71%)	3 (10.71%)	1 (3.57%)
Special education teacher for resource or withdrawal support	24 (85.71%)	1 (3.57%)	3 (10.71%)
Test / exam support	15 (55.56%)	8 (29.63%)	4 (14.81%)
Attendance monitoring	15 (53.57%)	9 (32.14%)	4 (14.29%)
Classroom modifications (such as alternate seating arrangements, or small group assignments)	8 (28.57%)	19 (67.86%)	1 (3.57%)
Related services (such as speech, occupational therapy, physical therapy, adaptive physical education)	14 (50.00%)	4 (14.29%)	10 (35.71%)
Anger and/or stress management (or related services, such as counseling)	17 (62.96%)	6 (22.22%)	4 (14.81%)
Behavior management (such as Behavioral Intervention Plans and use of tangible rewards)	7 (25.00%)	17 (60.71%)	4 (14.29%)

Note. NA = not applicable, did not deliver prior to COVID-19 remote instruction. Each row sums to 100%.

IEPs. While all teachers surveyed felt they had an ethical obligation to meet the mandates of students' IEPs, only 40% reported that they were able to meet the mandates of their students' IEPs during remote instruction. Most of the teachers (87%) felt that students had new and different needs during remote learning than indicated in their IEPs. To address these needs, the teachers reported creating videos and tutorials to provide both academic and technological support. Another common response was to help students with time management and organizational skills, as they did not have the routine of the traditional school day.

The percentage of teachers who felt they were able to monitor specific IEP goals is shown in Table 2, based on the results to question 19 in the survey. Teachers were able to monitor students' goals at moderately high rates for math, writing, and reading, and to some extent other content areas. However, teachers were less able to monitor students' social/behavioral (26%) and transition (14%) goals.

Table 2

Frequency (percentage) of Ability to Monitor IEP Goals During Spring 2020

Goal/Area	Able to monitor	Unable to monitor	NA
Math	24 (85.71%)	3 (10.71%)	1 (3.57%)
Writing	20 (71.43%)	6 (21.43%)	2 (7.14%)
Reading	21 (77.78%)	4 (14.81%)	2 (7.41%)
Content Areas	17 (60.71%)	6 (21.43%)	5 (17.86%)
Social / Behavioral	8 (28.57%)	18 (64.29%)	2 (7.14%)
Transition	5 (18.52%)	17 (62.96%)	5 (18.52%)

Note. NA = not applicable, did not monitor prior to COVID-19 remote instruction. Each row sums to 100%.

Communication. While many teachers communicate with their students' families, such communication is vital for special educators. According to the survey, 74% of the special education teachers reported that they were in more frequent contact with parents and families during remote instruction, while 10% reported less contact. There was also a change in the quality of the relationship with families, just over half (53%) reported an improved relationship with families, 39% felt it was the same as before, with only 8% reporting a worse relationship. The modes of communication used changed during remote instruction (see Table 3 and question 5 in Appendix A). For most, the phone was used both before and during remote instruction, but the number of people meeting in-person almost stopped completely during remote instruction. Conversely, the use of video conferencing, such as Zoom, Microsoft Teams, and Google Meet, was newly used during remote instruction; only one instructor reported using video conferencing with families before remote instruction.

Table 3

Frequency (Percentage) of Using Different Modes of Communication with Families Before and During Remote Instruction

Mode of Communication	Before COVID-19	During Remote Instruction	Both (Before and During)
Phone	2 (5.41%)	4 (10.81%)	31 (83.78%)
Email	3 (8.11%)	1 (2.7%)	33 (89.19%)
Video Conference	1 (2.86%)	33 (94.29%)	1 (2.86%)
In-person	33 (97.06%)	1 (2.94%)	0 (0%)
Other	2 (22.22%)	4 (44.44%)	3 (33.33%)

Note. Each row sums to 100%.

In contrast to the more frequent communication with parents and families, special educators reported that it was more difficult to collaborate and consult with general education teachers. When asked about their ability to collaborate and consult with general education teachers to ensure that students' IEP goals and needs were met, 45% felt their ability was the same, but 45% felt it was worse than before.

RQ 2: Successes During Remote Instruction

Technology Integration. About one third of the teachers (9 out of 22) identified learning new technologies and developing materials to support their students during remote instruction as their biggest success. Some identified this as significant professional growth for themselves and realized that these efforts were not just for the Spring 2020 remote instruction but would be used in their future teaching. As one teacher commented: "I was able to experiment with more apps and programs online. I learned a lot and will be using these resources when we return to the classroom." Some were able to create interactive workbooks or remote resource rooms that were useful to students, while another teacher was proud of being able to help their colleagues use technology and make the switch to remote instruction. One teacher summed it up: "By being essentially forced to make this shift to utilizing technology for everything we do; my biggest success was in engaging in A LOT of PD and getting experience/exposure to many new resources that I can utilize in my future teaching."

Student Success. Many teachers identified their biggest success by what students were able to accomplish. For example, one noted that some students' IEP goals were met "despite all of the obstacles" and another wrote that their grade 8 math class had students attending class "five days a week, for 45 minutes, and … were able to learn new standards with mastery!" Other teachers noted that students with anxiety, a student with autism spectrum disorder, and others participated in class more and completed more assignments during remote instruction than in in-person classes. It was deemed a success when students in a "Life Skills class were able to independently sign on and complete assignments and attend google [sic] meets." Teachers noted students' improvement with technology and the ability to document their own learning over the course of the spring.

Student Engagement. An important component of effective remote instruction is student engagement, so it is understandable that many teachers identified student participation as a success. For some, students just logging on was a success, or that once they did, they did not "shut down" and even participated once logged on. Some teachers cited the daily contact with most students as a success.

Relationships and Communication with Families. More than half of the teachers cited improved relationships with parents and families, and five teachers cited relationships with families as their biggest success during remote instruction. Some of these teachers felt they forged stronger relationships with families during this time. One noted that their efforts helped reduce stress and anxiety for families during this time. In addition, several teachers noted that parents were more aware of what was happening in the "classroom." In response to an open-ended question about their biggest success, many teachers cited "maintaining" or "improving" relationships with families.

RQ 3: Challenges to Instruction

Student Engagement & Attendance. When asked what their biggest challenge was, the most common response was student engagement (12 out of 22). Even those teachers who might have found some success in getting students to show up, actually engaging the students and keeping them on task was a struggle. One teacher described the lack of interest: "Students were happy to copy and paste responses to fulfill the diminished expectations of content teachers and grades did not count so the students felt like they did not need to access me. Minimal gains and growth were realized in the majority of my students. Furthermore, drastic regression in conflict resolution, socialization, anger management, etc. manifested itself as students simply closed their laptop and wouldn't sign back in for days." Some students did not do any work outside of the online classes. Another issue related to attendance in online sessions was whether the families could provide support for students, both with respect to helping with technology or just encouraging and expecting students to participate in online learning. For elementary teachers, those students who did not have consistent family support were unable to get themselves online, or once online, had difficulty participating.

Relationships with Students and Families. Even though some teachers were proud of the connections they were able to maintain or even improve with families during remote instruction, that was also a struggle in some situations. Many cited the lack of "connection," especially when

technology issues interfered with students being able to consistently participate in remote learning.

RQ 4: Delivery of Special Education Services During 2020-21 School Year

With only 8 responses to the February 2021 survey, we will present an overview of the results. There were five responses from elementary special educators, two junior high, and one high school. The junior high and high school teachers were teaching a combination of remote and in-person, while three of the elementary teachers were entirely in-person and the other two a combination. Teachers were asked about their primary teaching setting and allowed to select more than one option; most teachers selected two primary settings. Five of the teachers indicated resource room, five co-teaching, four consultant teachers, and two self-contained.

The teachers in the combination of remote and in-person all found interactions with parents and families to be more frequent than pre-COVID, while the all in-person teachers reported less frequent or the same number of interactions. Only three of the eight teachers found that the quality of their relationship with parents and families had improved compared with pre-COVID. All eight used some form of video conferencing in spring 2020 and continued to in the 2020-21 school year, even though none of them had used it prior to COVID-19.

With respect to IEP goals, all five elementary and six of the eight teachers, overall, found that IEP goals were better addressed in the 2020-21 school year than they had been during remote instruction in the spring, with a junior high and high school teacher reporting that things were the same. All the elementary teachers felt that they were able to meet the mandates of their students' IEPs, but none of the junior high and high school teachers felt they could. Most of the teachers felt that their ability to collaborate and consult with general education teachers to ensure students' IEP goals and needs were met in inclusive settings was the same as pre-COVID and one felt it was improved, however, the high school special educator found that their ability to collaborate was worse than pre-COVID. The high school teacher reported: "We still are not doing enough for SPED kids because we are stretched too thin trying to do remote, in person, and hybrid instruction. We would have needed several more teachers in order to do all of these models properly. Trying to juggle all of these jobs makes it hard to actually meet student needs."

Continued Use of New (to Them) Technologies. All eight instructors who responded to the February 2021 survey reported the continuing use of tools new to them during COVID-19, including those who were teaching only in-person. These tools included Google Classroom, Microsoft Teams and OneNote, See Saw, Raz Kids, Screencastify, Schoology, Nearpod, EdPuzzle, Zoom, recording themselves reading or solving math problems; with most teachers reporting the continued use of several of these tools.

Positive Take-aways from Spring 2020. When asked in February 2021 to think about what positives they could identify from the spring 2020 remote instruction, many noted the flexibility of both teachers and students to adapt to the new situation and that they learned new strategies and technologies and developed new techniques: "[a] crash course into technology," one called the experience. Another pointed out that "[i]t was affirming to myself as a professional that I could learn new instructional strategies implement them effectively." The high school special

educator learned "[how to] provide digital supports for students who would have relied on an adult to do that in person."

In comparing their teaching experience from spring 2020 with the 2020-21 academic year in general, one wrote: "I'm more tech savvy. … [The students are] more tech savvy too." Several mentioned the new focus on mental health and the appreciation of teaching in-person, especially for this student population.

Discussion

RQ1: How did special education teachers deliver remote instruction during the spring 2020 period of emergency instruction? Specifically, how did they attend to the requirements of a student's IEP? In general, we found that teachers were creative and committed to educating their students. If teachers found that they had difficulty delivering a particular service, or if students were struggling, they adapted and built-in new methods and tools. In the open-ended questions of the surveys, teachers indicated that this level of problem-solving and prudence (Mintrop & Zane) was an important aspect of their work and identity as a special education teacher.

Some, but not all services specified in students' IEPs were able to be met, according to our sample. The inability to meet the requirements of students' IEPs was also documented in a NYS report (2021, Office of the Comptroller). Many special education teachers were able to deliver most services, such as modifying work, providing individual support, and individualized materials, but addressing areas that often require a physical presence, such as behavior management, were more challenging. Even though the majority of teachers felt an ethical obligation to meet the goals of their students' IEPs, fewer than half felt that they were able to do so. Some aspects of the IEPs could not be observed, as was also documented by Davis (2020) in their series of interviews. Most were able to meet goals related to academic content areas, but behavior and transition were the goals most commonly not met. To maintain contact with families, teachers needed to employ new strategies, including video conferencing (e.g., Zoom). Similar results were found by Davis (2020), in their interviews with seven special education teachers.

RQ2: What were the successes identified by special education teachers? The overwhelming success identified by special education teachers was the use of new technologies during a period of such upheaval. They were proud of themselves and recognized that it was also something that so many of them would naturally do. As special educators, flexibility and adaptation are important to their work with students, at all times. They figured out how best to reach their students, especially because they recognized that so many students were in need. Teachers around the world, not just special education teachers recognized this in themselves. Even with all the challenges, the teachers recognized that many students were able to meet some of their IEP goals and participated in class. Another important aspect of the success teachers identified was their improved, or at least an ability to maintain, communication and a relationship with their students' families.

RQ3: What were the challenges to instruction identified by special educators? There were many families who had difficulty with technology. Even when that difficulty was overcome, most

participants recognized the difficulty with keeping students engaged in this new medium. As Davis (2020) found, some students were hindered by the background noise in their own house and a general "lack of engagement" p. 44. In our study, no teachers mentioned the need to use parents to collect data, but Davis found that sometimes they relied on that. Gathering data was definitely disrupted or altered by the context of virtual instruction.

RQ4: How were special education services delivered in the 2020-21 school year, in general, and compared with spring 2020? From those teachers who did respond to the second survey, most found that IEP goals were addressed better in 2020-21 than in spring 2020. Those who felt they were addressed the same, were teaching a combination of remote and in-person. In terms of meeting the mandates of their students' IEPs, three of the five teachers who were teaching a combination of remote and in-person reported that they could not meet the mandates of their students' IEPs. Most of the teachers reported the continued use of technologies that were new to them during the initial remote instruction in Spring 2020, even when they returned to the classroom. They recognized the value of some of these technologies to their students.

Without explicitly doing so, the actions of many special education teachers during this time exemplified the Council for Exceptional Children's Code of Ethics (2015). For example, here are three that were exemplified by the teachers' responses:

1. Maintaining a high level of professional competence and integrity and exercising professional judgment to benefit individuals with exceptionalities and their families.
…
4. Practicing collegially with others who are providing services to individuals with exceptionalities.
5. Developing relationships with families based on mutual respect and actively involving families and individuals with exceptionalities in educational decision making. (CEC, 2015)

The changes brought on by remote instruction forced all teachers, but especially, special education teachers to be creative and find solutions so that their students could continue to learn, this demonstrated that they used their own "professional competence" and "integrity." They also needed to work with their colleagues to ensure that their students were getting the services they needed. Finally, to maintain a relationship with families, teachers needed to use new tools, share their personal contact information, and be creative so that families knew they were supported during this time.

Limitations and Future Directions

The biggest limitation of our study was the low response rate to our survey request. However, that was not surprising given that our target population had just gone through the most difficult few months of their teaching careers in a state that was considered the epicenter of the COVID-19 crisis at that time. We are currently completing qualitative analyses of a set of interviews we conducted with special educators during this same period. This work will provide a more in-depth look at the experience of special education teachers in NYS during COVID.

Conclusion

All teachers had challenges during the spring of 2020, however, special educators faced unique challenges; we found that many responded in innovative ways aligned with standards of integrity for special educators. The teachers were proud of themselves for their ability to learn new technologies and work with each other and general education colleagues in ways they had not done before. However, there were times they felt that they could not meet the mandates of students' IEPs. Although, for some this improved during the 2020-21 school year. Reordering of priorities considering access and outcomes, may help highlight a focus in education that approaches a practical goal of success based on student factors.

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Appendix A: Summer 2020 Survey Items

1. Were you a special education teacher in a NYS public school during spring 2020?
   - Yes
   - No (If *No*, skip to the end of survey)

2. Which best describes the frequencies of your interactions with parents and families during remote instruction compared to before COVID-19?
   - More frequent than before
   - The same as before
   - Less frequent than before

3. Which best describes the quality of your relationship with parents and families during remote instruction?
   - Improved
   - The same as before
   - Worse

4. Compared with pre-COVID, how would you describe your ability to collaborate and consult with general education teachers to ensure students' IEP goals and needs were met in inclusive settings?
   - Improved
   - Same as before
   - Worse

5. Select the modes of communication you used to communicate with parents and families -- both before COVID-19 and during remote instruction.

   Options: Before COVID-19 and/or During Remote Instruction.

   Phone
   Email
   Video Conference (e.g., Zoom, Google Meet, Teams)
   In-person
   Other (Please specify below)

6. What are some new tools, strategies, or methodologies that you used during remote instruction **that you will continue to use** when you return to in-person instruction? (Check all that apply)
   - Google Classroom
   - Microsoft Teams
   - Flipped classroom
   - Recording student reading
   - See Saw
   - Other (Please Specify): _____
   - Raz Kids
   - Record yourself reading, solving problems, etc. to share with students
   - Screencastify

7. Which of the following were included in your service delivery this spring?
    - Practice tests or tests designed to reflect state tests
    - Content specifically reflected on state tests
    - Other ways you addressed high stakes testing in your teaching **(Please Specify):** _____

8. How have IEP goals been addressed during remote instruction? **(open-ended question)**

9. In general, do you think IEP goals assist students in performance on high stakes testing?
    - Yes
    - No

10. When New York State announced that state tests would not be administered this year, did your teaching change?
    - Yes
    - No

11. During remote instruction, were you able to meet the mandates of your students' IEPs?
    - Yes
    - No

12. In general, do you feel you have an ethical obligation to meet the mandates of the IEP?
    - Yes
    - No

13. During remote instruction, what more could have been done to ensure students received adequate services? **(open-ended question)**

14. Did your students have different needs during remote instruction than indicated in the IEP?
    - Yes (If yes, go to question 15)
    - No (If no, go to question 16)

15. How did you adjust to these needs?

16. How often does your district require IEP progress reports be created and sent to parents?
    - Monthly
    - Quarterly
    - At the end of each term
    - Every 3 months
    - Other (please specify) _____

17. As you assessed the progress toward IEP goals this spring, did you have specific data in measurable terms to document progress or lack of progress toward goals?
    - Yes
    - No
    - What types of data did you have available? Select all that apply.

- Benchmark scores
- Test scores
- Observational data
- Other (Please specify) _____
- Teacher report
- Parent Report

18. Indicate whether you were able to monitor goals in the areas listed below -- or indicate that you did not monitor goals in that area before remote instruction.
    Options: Able to monitor, Unable to monitor, or Did not monitor prior to remote instruction

    Math
    Reading
    Writing
    Content Areas
    Social/Behavioral
    Transition
    Other (Please specify)

19. Think about all your students and their progress toward IEP goals as documented by their progress monitoring reports in June. What percentage of students is best described by the statements below? Enter a percentage next to each description. The total percentages should add up to 100.

	Percentage
Worse than expectations based on progress monitoring reports prior to March 2020	
Consistent with expectations based on progress monitoring reports prior to March 2020	
Better than expectations based on progress monitoring reports prior to March 2020	
Total	100

20. Indicate whether you (or the appropriate provider) were able to deliver the services listed below to your students -- or indicate that you (or the appropriate provider) didn't deliver these services before remote instruction.

Options: Delivered, Not delivered, or Not applicable.

Modification of student written work
Small group instruction
One-on-one support
Text-to-speech and speech-to-text technology
e-readers
Specific reading materials (such as leveled, culturally relevant, or curricular)

Special education teacher for resource or withdrawal support
Test / exam support
Attendance monitoring
Classroom modifications (such as alternate seating arrangements, or small group assignments)
Related services (such as speech, occupational therapy, physical therapy, adaptive physical education)
Anger and/or stress management (or related services, such as counseling)
Behavior management (such as Behavioral Intervention Plans and use of tangible rewards)

21. Thinking about this period of remote instruction:
    a. What was your biggest challenge? (open-ended question)
    b. What was your biggest success? (open-ended question)
    c. What are you most proud of being able to do? (open-ended question)
    d. Anything else you would like to share about your experiences with remote instruction this spring? (open-ended question)

22. **Directions**: The following statements represent a skill set for special educators. Please indicate your level of confidence for each of the statements by choosing a response from *Strongly disagree* to *Strongly agree*. Please select a response, even if this is not currently a part of your job.
    Options: Strongly Agree, Agree, Neutral, Disagree, or Strongly Disagree

    I can support struggling students.
    I can plan instruction to address the linguistic and cultural characteristics of English language learners with disabilities.
    I can motivate reluctant learners.
    I can promote cooperative learning.
    I can overcome adverse situations that impede student learning.
    I can use functional behavioral assessment (FBA) procedures to determine the reasons for inappropriate behaviors displayed by students with severe cognitive and communicative disabilities.
    I can create a behavior intervention plan (BIP).
    I can facilitate the inclusion of my students in general education settings by collaborating with general education teachers.
    I can redirect disruptive behaviors.
    I can make accommodations and modify curriculum based on students' needs.
    I can use a variety of assessments to determine the academic needs of my students.
    I can keep students engaged and on task.
    I can record frequency data for behavior intervention plans (BIP).
    I can facilitate an individualized education program (IEP) annual review meeting.
    I can use assessment data to create short-term behavioral objectives/benchmarks.
    I can collaborate with all members of the IEP team to develop appropriate individualized annual goals.
    I can differentiate instruction to meet the diverse needs of my students.

I can complete the required IEP paperwork.
I can use a variety of strategies to reach students with disabilities.
I can create a transition plan for students with disabilities as they prepare for secondary education.
I can use assistive technology devices to support communication, learning, and improved functional capabilities of individuals with disabilities.
I am aware of special education mandates, policies, and procedures.
I can develop supportive partnerships with families.

Directions: The next set of questions ask about your background.

23. Before the change to online learning in March, what was your primary setting? Check all that apply.
    - Resource room
    - Self-contained
    - Other (Please specify)
    - Co-teaching
    - Consultant

24. Which grade level(s) did you work with this spring? Check all that apply.
    - Pre-K
    - Kindergarten
    - 1st Grade
    - 2nd Grade
    - 3rd Grade
    - 4th Grade
    - 5th Grade
    - 6th Grade
    - 7th Grade
    - 8th Grade
    - 9th Grade
    - 10th Grade
    - 11th Grade
    - 12th Grade

25. How many students were in your caseload this spring?

26. How many years of teaching experience do you have, total?

27. How many of those years were in special education?

Appendix B: Winter 2021 Survey Items

1. Are you currently teaching in a NYS public school during the 2020-21 school year?
    - Yes
    - No (If *No*, skip to the end of survey)

2. Which best describes your current teaching situation?
    - All remote instruction.
    - All in-person instruction.
    - A combination of remote and in-person instruction.

3. Which best describes the frequency of your interactions with parents and families now compared to pre-COVID?
    - More frequent than before
    - The same as before
    - Less frequent than before

4. Select the modes of communication you used to communicate with parents and families – both before COVID-19 and during remote instruction.

    Options – Check all that apply: Before COVID-19, During Remote Instruction, or Now

    Phone
    Email
    Video Conference (e.g., Zoom, Google Meet, Teams)
    In-person
    Other

5. What are some new tools, strategies or methodologies that you used during remote instruction **that you still use now**? (Check all that apply.)

    Google Classroom
    Microsoft Teams
    Flipped classroom
    Recording student reading
    See Saw
    Raz Kids
    Record yourself reading, solving problems, etc. to share with students
    Screencastify
    Other (you may provide more than one)

6. How are IEP goals being addressed now compared with during remote instruction in spring 2020?
    - Better than in spring
    - The same
    - Not as well as in the spring

7. Compared with pre-COVID, how would you describe your current ability to collaborate and consult with general education teachers to ensure students' IEP goals and needs were met in inclusive setting?
    - Improved
    - Same as before
    - Worse

8. Do you currently feel that you are able to meet the mandates of your students' IEPs?
    - Yes
    - No
9. Were there any positives that you took away from remote instruction during the spring? **(open-ended question)**

10. Anything else you would like to share about your experiences teaching now compared with remote instruction in the spring? **(open-ended question)**

11. What is your primary setting? (Check all that apply.)
    - Resource room
    - Self-contained
    - Co-teaching
    - Consultant
    - Other

12. Which grade level(s) do you currently teach? Check all that apply.
    - Pre-K
    - Kindergarten
    - 1st Grade
    - 2nd Grade
    - 3rd Grade
    - 4th Grade
    - 5th Grade
    - 6th Grade
    - 7th Grade
    - 8th Grade
    - 9th Grade
    - 10th Grade
    - 11th Grade
    - 12th Grade

13. How many students are in your caseload?

Inclusive Education and Rural Middle School General Education Teacher Preparedness

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Abstract

With the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004, students with disabilities are expected to be educated in the least restrictive environment to the greatest extent possible. Through the practice of inclusive education, students with disabilities who are classified and possess IEPs can be placed in the general education setting. This has impacted general education teachers who are not trained in special education and are now expected to teach inclusion classes. This study focused on the unique aspect of rural middle school general education teachers. Studies in rural school communities are limited when compared to studies conducted in urban and suburban areas. The purpose of this study was to describe the background, training, preparedness, and attitudes of rural middle school general educators in a rural section of southern New Jersey. This qualitative descriptive study was conducted utilizing an open-ended questionnaire and classroom observations. Through the six-phase model of thematic analysis established by Braun and Clarke (2006), eight themes were identified in the study: struggles equal referral, IEPs provide equity, insufficient IEP involvement, parental importance, minimal training, inadequate district support, inclusion is beneficial, and more training desired. The results of this qualitative study revealed that while participants believe in inclusive education, they feel unprepared to meet the diverse learning needs of students with disabilities.

Inclusive Education and Rural Middle School General Education Teacher Preparedness

Introduction

The United States has enshrined the rights of students with disabilities to receive a free and appropriate public education in the least restrictive environment (Individuals with Disabilities Education Improvement Act, 2004). This has a specific impact on students with disabilities who receive special education services through the guidance and frameworks established by the IDEIA (2004). The reauthorization of IDEIA in 2004 sets forth the mandate that all children are expected to be educated with their nondisabled peers to the greatest extent possible (Gallegos, 2010). A major impact of this act is its focus on providing inclusive classroom placements for students with disabilities and requiring teachers to work with students with diverse learning needs.

The issue at hand is that a majority of general education teachers are not fully prepared for the realities of teaching in the inclusive setting. There are a number of teachers who entered their respective colleges of education to be trained in pedagogical methodologies and to be prepared for service as a general educator. Others might choose to specifically focus their training in special education. For general education middle and high school teachers, teacher preparation training focuses on educational theory and practice, along with an in-depth study of content specialization; however, there is little to no exposure to special education practices, laws, procedures, or interventions (Zagona, Kurth, & MacFarland, 2017). This absence of special

education training has a direct impact on general education teachers facing an inclusive teaching assignment, as he or she might feel unprepared to provide modified instruction or might feel trepidation at not understanding the type and degree of disability with which a student presents (Hernandez, Hueck, & Charley, 2016). Furthermore, students with disabilities feel this impact as well by not having sufficiently trained teachers who are able to meet their needs (Gokdere, 2012).

A significant number of students with IEPs are regularly educated in the general education setting, receiving instruction through in-class-resource programs with co-teaching models. According to the National Center for Education Statistics (2021), there were approximately 65% of students with disabilities in the general education classroom for 80% or more of the school day. This has placed the general educator in a situation of needing to meet the unique learning and behavioral needs of students with disabilities. In addition, these educators are also expected to follow a legally binding IEP, while not having been specifically trained for such tasks. Prior studies have revealed that this causes major stress for teachers (Brackenreed, 2008; Forlin, 2001; Galaterou & Antoniou, 2017). Little research has been conducted concerning the preparedness of general education middle school teachers from rural communities specifically (Bright, 2018).

Purpose of the Study and Research Questions

Research in the area of inclusion and special education has been conducted for years, with studies focusing primarily on urban and/or suburban environments. There appears to be a gap in the research with regard to rural school districts (Bright, 2018). Rural school communities face numerous challenges similar to that of urban schools, including high poverty rates and poor test performance (Logan & Burdick-Will, 2017). Rural school districts comprise approximately 57% of the overall school systems in the United States; however, there is a significant discrepancy in the number of studies conducted within this setting (Bright, 2018).

The major research questions to be investigated are as follows:
1. What is the general education teacher's knowledge of special education processes and IEPs?
2. What is the general education teacher's background in special education training and interventions?
3. What is the general education teacher's perception of inclusive education and teaching students with disabilities?

Method

Research Design

By conducting a qualitative descriptive study, I was able to gain each rural general educator's background, training, and attitude toward teaching in the inclusive setting. Qualitative descriptive studies are valuable when conducting a study in its natural state to seek a clear description of the topic (Lambert & Lambert, 2012; Magilvy & Thomas, 2009). In seeking to understand the lived experiences and perceptions of participants, qualitative research designs are useful (Creswell & Creswell, 2018; Queiros, Faria, & Almeida, 2017). Quantitative data was not suitable for the purpose of this study since statistical data would not provide the perceptions and experiences from each participant to sufficiently answer the research questions.

To gather data for this study, an open-ended qualitative questionnaire was sent to qualified participants through Google Forms via email. The questionnaire was designed to be anonymous, so that participants could answer questions regarding attitudes toward inclusion honestly. The questions asked were based on the research questions developed for this study. In total, 14 participants completed the questionnaire. In addition to the questionnaire, six classroom observations were conducted. These were conducted to garner insight into classroom practices during in-class-resource classes. The observation data was utilized to compare participant responses to actual classroom practice. A field test was conducted to ensure that the open-ended questions were easily understood and provided applicable data and to ensure that the focus of the observations were on pedagogical practices to provide pertinent information regarding inclusive teaching practices.

Study Population

The target population for this study were rural general education middle school teachers in one school in southern New Jersey. There were 14 participants who agreed to participate in the study. Table 1 provides a breakdown of the content area represented in the study, and Table 2 provides the longevity of participants in the field of education. The teachers selected for the study were rural general education teachers who taught in the inclusive setting in grades six through eight from one middle school. The teachers selected to participate have a variety of educational backgrounds ranging from bachelor's to master's degrees. In addition, there were differences in gender, experience, and content areas. Teachers who teach "special" classes (music, art, physical education) were excluded from the study.

Table 1

Content	Frequency	Percent
ELA	5	35.7
Social Studies	3	21.4
Science	3	21.4
Math	3	21.4
Total	14	100

Table 2

Years	Frequency	Percent
1-4	2	14.2
5-10	4	28.5
11-15	1	07.1
16-20	4	28.5
21+	3	21.4
Total	14	100

Procedures

Utilizing the research questions guiding this study, the questionnaire was developed. The first set of questions examined the rural general education teacher's knowledge of special education and the IEP processes based on their lived experiences. The second set of questions examined the

general educator's background in regard to special education training and interventions. These questions provided insight into the extent to which their college teacher preparation program prepared them for the reality of inclusive teaching. Finally, the last set of questions specifically examined the general educator's attitude towards special education and the level of confidence they possess in teaching in the inclusive setting. The participants were asked to respond to each open-ended question with as much detail as possible.

Study Instrument

Research Question (1): What is the general education teacher's knowledge of special education processes and IEPs?

Questions:

1. What is your content area?
2. How long have you been in the teaching profession? (1-4; 5-10, 11-15, 16-20, 20+)
3. How long have you taught in the inclusive setting?
4. From your perspective, what is the process for a student to be classified as needing special education and related services?
5. From your perspective, can you describe the members of the IEP team?
6. What do you believe is the purpose of an IEP for a student?
7. Explain your experiences with IEP development.
8. From your perspective, are parents a key member of the IEP process?

Research Question (2): What is the general education teacher's background in special education training and interventions?

Questions:

1. During your degree program, did you have any coursework in special education? If so, what was the course content?
2. Please describe any training that you have received from the school district for teaching in the inclusive setting?
3. Please describe any disabilities that you have encountered in your classroom. Did you receive training to support those students?
4. Please describe any personal experiences you have chosen to enhance your knowledge of special education or interventions.
5. What the ways in which you may seek assistance when you have difficulty with a student with a disability?
6. How do you differentiate instruction in your classroom?

Research Question (3): What is the general education teacher's perception of inclusive education and teaching students with disabilities?

Questions:

1. Do you believe that you are able to meet the needs of all students in your classroom? Why or why not?
2. Do you believe that students with disabilities should be included in the general education setting?
3. What are some reasons you believe students may benefit from being in the inclusive setting?

4. What are some reasons you believe students may be harmed from being in the inclusive setting?
5. Do you desire to teach in the inclusive setting? Why or why not?

The data collected was analyzed using a qualitative thematic analysis following the six-phase model established by Braun and Clarke (2006). The questionnaire data was electronically transferred into a spreadsheet. In vivo coding, using verbatim responses, was completed by hand, reviewing patterns and ideas, highlighting key phrases, and typing initial codes into a code organizer (Saldana, 2012). Thematic analysis occurred by coding the data and determining themes, which reflected a pattern of shared meaning (Braun, Clarke, Hayfield, & Terry, 2018). After the data collected was coded, and an examination of patterns was conducted, interpretation of the data commenced.

In addition to the open-ended questionnaire, six classroom observations were conducted to observe inclusive practices in the classroom setting. Two classes of in-class-resource per grade level (six through eight) were observed. These observations focused on strategies and classroom climate toward the students with IEPs. Table 3 summarizes the number of observations, duration, and content areas observed.

Table 3

Classroom Observation Summaries

Content	Duration	Frequency
ELA	55 minutes	3
Math	57 minutes	1
Science	55 minutes	1
Social Studies	60 minutes	1
Total	227 minutes	6

Results

Upon completion of the data analysis, various themes emerged in response to each research question. These are discussed in relation to the respective research question. The results of this qualitative descriptive study revealed that the participants believe in inclusion; however, they feel unprepared to meet the diverse learning needs of students with disabilities.

Findings Research Question One: Research question one sought to determine the participants' knowledge of special education processes and IEP development via lived experience. The data revealed that most participants understand that special education is provided for students who struggle academically and behaviorally. There were differences in understanding the process of referrals, meetings, IEP team members, and actual IEP development. The themes that emerged from the responses for this research question were struggles equal referral, IEPs provide equity, insufficient IEP involvement, and parental importance.

Struggles equal referral

Participants are aware that students are referred for special education due to academic and/or behavioral struggles. The participants identified academic difficulty as the primary reason for a referral for special education services.

> *If a student seems to be struggling, the teachers will determine whether or not the student needs to [be] evaluated by the Child Study Team. From there, the parents are notified and with permission, are tested to determine the need for an IEP (R2).*

> *Teachers/families notice that their child is not thriving in school, families might talk to their doctors, teachers bring it up at team meetings, student is referred to I&RS, who then follow their process to determine if student is eligible (R14).*

IEPs provide equity

All participants presented an understanding that IEPs provide students with an equitable education and assistance to be successful. The participants have a consistent understanding that the reason for a child possessing an IEP is due to a disability that causes the child to struggle in some way. The participants' responses revealed a consensus that the IEP is in place to assist students and to provide them with an equitable education.

> *To make the student's educational experience equitable to others. In other words, help students with additional tools be able to achieve where they wouldn't ordinarily be able to because of academic or emotional issues (R8).*

> *To help make the playing field even for all students (R1).*

> *To ensure that all students are given the opportunity for a successful learning experience, despite academic/learning "disabilities" or "difficulties" (R2).*

Insufficient IEP involvement

Participants were able to identify the need for an IEP; however, the general education teachers had minimal involvement in the actual development of IEPs. They did not have experience with goal development or determining applicable modifications and accommodations. Two participants had no involvement at all – not even attending an IEP meeting.

> *I don't have much experience in actually developing an IEP, only following them. It would be helpful if the modifications were fewer and less confusing (R6).*

Parental Importance

All participants viewed the parents as essential members of the IEP team. Some participants believed that active participation by the parent will assist the parent in knowing the needs of his or her child better.

> *Absolutely! I consider them to be one of the main stakeholders in the process. They are needed to help their children be successful (R9).*

> *They should be involved in the meetings and progress monitoring. Most do not have the knowledge to know what supports are available and will work, but if their student has been involved in this process for a long time, then they will certainly have insight into what has worked and not worked for their student (R10).*

Findings Research Question Two: Research question two examined the participants' background in special education training and developing interventions. Almost all participants reported being untrained for special education and inclusive teaching practices. Out of 14 participants, seven participants shared that they had no specific college coursework in special education. Those participants that did report coursework explained that it revolved around differentiation and co-teaching models, but not specific strategies or techniques for intervention and instruction. Furthermore, the participants expressed that there is little to no support or training by the school district in regard to special education and intervention development. Two themes emerged from the responses of the participants: minimal training and inadequate district support.

Minimal training

The data revealed that most participants had minimal training in their college teacher preparation programs. Seven out of 14 participants had no coursework in special education. Some participants shared having some coursework; however, it appeared from the responses that these courses were not effective in preparing the participant for the work in the field.

> *Yes, I did have some coursework in my teaching classes. We were not provided too much training. Most of my training was learned from experience (R9).*

> *Yes- Differentiated Instruction and Teaching the Exceptional Learner. Both were less than two credits. They covered the types of accommodation students could get and types of learning disabilities that qualify for 504s or IEPs. There was some talk of breakouts, team teaching, and differentiated assignments/choice menus/leveled reading. I got most of my knowledge by working in ICR as a long term sub and attending workshops (R10).*

Inadequate District Support

In-district professional development has not been offered to support the general education teachers. Participants explained that there has been no training in addressing student needs or understanding disabilities present in the inclusive setting. The professional development offered to the participants focused mostly on co-teaching in years past. This has led to the participants feeling unprepared to meet the diverse learning needs of their students.

> *I have had autistic children and BD/ED children. I have had no support or training for these students (R7).*

> *Many are behavioral disabilities, autism, cognitive type disabilities. Many are ADHD. Some have dyslexia. I have not received formal training for any of these, however, I have had many discussions to obtain recommendations (R12).*

I have encountered autism, possible psychopathic or sociopathic behaviors and extreme anxiety. I did not receive any training (R14).

No training other than the videos we watch over summer (R13).

Professional development in the co-teaching aspect of education (R12).

We had one training session on UDL menus, which touched on differentiated instruction and how to form activities for all learning levels (R7).

Findings Research Question Three: The final research question examined the participants' attitude towards inclusive education and confidence in teaching students with disabilities. The study revealed that the majority of participants had positive attitudes toward inclusion. Most teachers identified benefits to each student's educational success through inclusion; however, most participants expressed that more training is needed to adequately meet their students' needs. Two themes emerged from the data from this research question: inclusion is beneficial and more training desired.

Inclusion is beneficial

Participants shared the belief that inclusion is beneficial for students.

Every child deserves to be loved and feel wanted. Every child has the right to an education, the best the school is able to provide. Every child has something special to offer. So, yes, I desire and enjoy working with all students, regardless of their ability level (R11).

Yes, because I believe it is fair for all students (R9).

I think students may benefit from being in the inclusive setting by having access to experiences they might not otherwise have. I also think that being around higher-level learners can (but not always) help them (R6).

In some cases, they will strive to reach the quality of work as the students without IEP's. I also think it gives them the opportunity to get assistance from other students, which, I believe, will make them be more confident and not feel so "different" (R2).

It helps with self-confidence. It means a great deal when you are dealing with adolescences. If students see that their classmates struggle and/or that they can succeed at different aspects of class, it helps to give them realistic expectations (R8).

More training desired

While there are strong beliefs in inclusive classrooms amongst the participants, there is a desire for more training. Some participants felt that they were not fully prepared causing a disservice to students. Three participants expressed concern about meeting the needs of students due to insufficient training. One participant did not desire to teach in the inclusive setting due to not being certified as a special education teacher and receiving no training.

I welcome the challenge, but I hope that I am able to provide the services that the students need as I am woefully undertrained (R14).

I do not desire to teach in an inclusive setting. I am not certified in special education nor am I adequately trained in providing those services. It wouldn't bother me as much if there were competent Special Education co-teachers, but it always changes year to year and there never any consistency. It makes it really hard to work that way (R7).

Unfortunately, I don't feel that I am qualified to work in an inclusive setting, because I don't have the knowledge of "special education", and in many cases, my co-teacher doesn't either (R2).

Six classrooms were observed during an in-class-resource period. As a second method of data collection, the data was able to be triangulated by using multiple sources of data collection. The results of the observations revealed that most teachers treated all students equitably. The teachers held high expectations for all students. The students were treated with respect and care. Modifications and accommodations were minimal during instructional time. Most modifications to assignments were completed by the special education teacher. The lack of training in inclusive practices is evident in the classroom observations.

In further analyzing the observation data, one classroom did utilize data driven instruction with differentiated activities, and many teaching teams utilized a strong co-teaching relationship. Out of six observations, four did not have differentiated instruction for the class with most of the period spent in whole class instruction. Two classrooms used class-wide modifications, such as reading a class novel aloud together. One classroom displayed a strained co-teaching relationship. While students were treated in an equitable manner, there were noticeable moments of frustration between the teachers.

Discussion

Implications for Practice

The results of this study revealed that the participants believe in inclusion; however, they feel unprepared to meet the diverse learning needs of students with disabilities. The need for training and support for general education teachers is essential for the success of students with disabilities. This is an important consideration considering that over 6,000,000 students have been receiving special education services since 2016 according to the 40th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, 2018 (US Department of Education, 2018).

With inclusion as a right of students with disabilities, all teachers have to be prepared for encountering disabilities in the general education setting (Karten, 2008). Teachers are expected to implement and follow a student's IEP upon being classified (Cohen & Spenciner, 2005). New Jersey state administrative code identifies the general education teacher as directly responsible for students with an IEP in the inclusion setting (NJAC 6A:14). This places an enormous

responsibility on the general education teacher, and it is imperative that the teachers receive the necessary support and training to ensure that each student's needs are being met.

Approximately 65% of students served under IDEA (2004) are instructed at least 80% or more of the time in inclusion classes (De Brey, Snyder, Zhang, & Dillow, 2021). While a significant amount of instructional time is spent in the general education setting, the participants in this study reported being unprepared to meet their students' unique learning needs. Based on responses from the participants, this causes stress over not meeting the needs of their students. These results are similar to other studies conducted in which 85% of teachers sampled reported that the biggest stressor in their career was following an IEP appropriately (Brackenreed, 2008; Forlin, 2001).

Furthermore, as students enter inclusion classrooms they develop knowledge by building on experiences and internalizing them (Kritikos, McLoughlin, & Lewis, 2018). This is troubling because the data collected from this study revealed that the participants have concerns over not understanding disabilities and not possessing strategies to work with students with disabilities. As the participants explained, they feel unprepared and insufficiently trained to work with students with disabilities. This will potentially impact the experiences of the students who in turn may internalize these negative experiences.

In professional practice, the results of this study provide significant insights. The responses from the participants lead to the conclusion that there is a high need for professional development in the area of inclusive teaching for rural general education teachers. In addition, the data suggests that college level teacher preparation programs need to focus course content on special education and inclusive teaching practices. Teachers expressed the need for training and understanding of disabilities in the data. The study helped narrow this need to two main areas: an understanding of disabilities and training to assist students.

The rural general education teachers in this study demonstrated a need for an understanding of disabilities. The need for foundational knowledge about the types of disabilities that they will encounter can help them understand the nature of the disability, as well as potential strategies to support students. Responses from the participants revealed that they encounter disabilities ranging from Autism to Emotional Regulation Impairment. In addition, there are many students with specific learning disabilities in the in-class-resource setting. The teachers need to be supported by offering training in these disabilities, which can lead them to be more understanding of students' needs and be more confident in meeting their unique learning needs in the classroom. By understanding disabilities, teachers can avoid misconceptions about a student, as they would know that the disability plays a part in classroom functioning.

The second area of need is in training teachers with sound instructional strategies for students with disabilities. The responses of the teachers, and the classroom observation data, revealed that most instruction is comprised of whole class activities with limited modifications to instructional practices. Professional development should be offered that would assist teachers in developing appropriate instructional strategies and interventions for students with specialized learning needs.

By incorporating more training and support, general education teachers will possess more knowledge in meeting the needs of all students. This can lead to students feeling supported and understood. This will lead them to having more positive school experiences. Students have the potential to be more successful in class, as the teachers will have more strategies and interventions to utilize in the classroom.

By supporting the teachers in developing their knowledge and increasing their understanding of special education, the students can be the recipients of a strong educational foundation. Teachers report that not understanding disabilities and not possessing the training to meet students' diverse needs makes them feel unprepared to teach inclusion classes. In offering more support, the teachers have the potential to be stronger in their instructional practices, and they might be more confident in meeting each student's needs. Students have the potential to achieve more and to be successful by having fully trained teachers who understand them and their unique learning needs.

School districts should consider using surveys, interviews, or other means of data collection to make data driven decisions about professional development. This will allow the teachers to receive what they need for professional growth, and the students will reap the benefits of strong, differentiated, and effective instruction tailored to their unique learning needs. This would allow every student to have the chance to reach his or her fullest potential.

Limitations of the Study

In interpreting the results from this qualitative descriptive study, there are a few limitations that should be taken into consideration. Primarily, this study focused on rural general education teachers in one geographic location from one middle school. This potentially limits generalization of the findings to other regions with similar characteristics. Participants responded through an open-ended questionnaire. This limited the ability to ask follow-up questions with participants. Another limitation to this study was that participants did not participant in any follow up interviews. This could have allowed participants to clarify any point they may have wished to explain further. An additional limitation of this study was the presumption that the general education teachers who participated were rated as highly effective or effective teachers. Teacher effectiveness should be a consideration.

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Designing Appropriate Small Group Intensive Instruction within an MTSS for Students with Low Incidence Disabilities

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Abstract

Currently many schools engage in a systematic process, called a Multi-Tiered System of Support (MTSS), that simultaneously accounts for every student's academic progress and instructional needs. A central tenet of an MTSS framework is providing remedial, increasingly intensive, small group instruction to students who are not demonstrating grade-level progress after receiving scientifically-based instruction in a general education classroom. Data indicate that a small percentage of students will need to receive this remedial instruction, and that an even smaller percentage, such as students with low incidence disabilities, may warrant a somewhat different approach. Yet, little has been written about it. Consequently, this paper explains how one clearly-articulated approach to remedial MTSS instruction can be repurposed for students with low incidence disabilities. This repurposing allows for school personnel to begin discussing intensive, small group instruction for students with low incidence disabilities who are not expected to realize grade-level progress via an MTSS.

Keywords: small group instruction, low incidence disabilities, multi-tiered systems of support, intensive intervention

Designing Appropriate Small Group Intensive Instruction within an MTSS for Students with Low Incidence Disabilities

For the past two decades, the presentation of effective, remedial instruction to students in small group arrangements has received considerable attention as one element of certain schools' efforts to account for the performance of each of their students through a multi-tiered systems of support (MTSS) framework (Fuchs & Fuchs, 2006). Examples of these frameworks include response to intervention (RTI) and positive behavior interventions and supports (PBIS). While these frameworks can address both students' deficient academic and school social behaviors, for the sake of clarity this paper focuses on the use of an MTSS framework that attends exclusively to the remediation of students' academic deficits.

An MTSS framework is composed of tiers that function as classifications for the types of instructional services students are provided. The number of tiers in a framework, and their purpose, can vary markedly. The most basic framework is comprised of three tiers.

1. Tier 1 in which students receive high-quality, scientifically-based instruction to master grade-level core curriculum content in accordance with the school's scope and sequence. This instruction is presented in a general education classroom in which large group arrangements predominate.
2. Tier 2 in which a student is provided instruction that is specifically designed to remediate their academic achievement gap so that they can return to, and forevermore remain in, Tier 1. The two primary, distinguishing features of Tier 2, as compared to Tier 1, are the use of small group arrangements and the provision of more intensive intervention.
3. Tier 3 involves the provision of special education services to students who meet the eligibility criteria for these services (Morse, 2020a).

Noteworthy to this paper is the way that Tier 2 sets the standard for the design and operation of a school's small group, remedial instruction. Three primary features of this instruction are that it (a) consists of a pupil-to-teacher ratio of 4-5:1; (b) has as its goal the remediation of each student's academic achievement gap; and (c) attains this goal by way of a recursive process that involves intensifying intervention (National Center on Intensive Intervention, 2013). Yet, advocates of an MTSS recognize that some students will never perform on grade-level by being provided an MTSS's Tier 2 services (National Center on Intensive Intervention, 2013)**.** These students include those who manifest low incidence disabilities.

As was noted previously, the hoped-for outcome of Tier 2 services is the remediation of a student's academic achievement gap and return to the general education classroom where the student will perform on grade level void of educational services that are not routinely provided to other students who are performing similarly. Given the reported learning characteristics of students with low incidence disabilities, this hoped-for outcome is unrealistic for these students.

Students with Low Incidence Disabilities

For the purpose of this paper, students with low incidence disabilities are categorized as such based on sharing two distinctions. One is that their disability occurs, at most, in 1 in every 100 students. A second distinction is that these students evidence a moderate or more significant intellectual disability that is identified as either a primary or co-occurring disability. For instance, a student with autism spectrum disorder and a significant intellectual disability would present with the two distinctions defined here.

Throughout their time in school, these students will demonstrate a noteworthy academic performance gap that, likely, never will be eliminated. It is highly probable this will be the case as a result of their learning characteristics that have been noted to include (a) acquiring new content at a low rate, (b) learning less content, and (c) demonstrating difficulty maintaining and generalizing learned content (Lemons et al., 2016; Ryndak & Alper, 1996; Westling & Fox, 2009).

In light of these circumstances, some educators simply assume that the academic instructional needs of these students cannot be addressed in a manner that is similar to their peers within the basic three-tier MTSS model as it was described above. Other educators, embracing the principles of what has come to be known as full inclusion, have sought answers to the question regarding how an MTSS framework can be logically and meaningfully applied to students with low incidence disabilities. Posing and satisfactorily answering this question is important to both the educators most directly involved in the design and implementation of these students' educational programs as well as the entire school community that is working to use an MTSS framework to account for the performance of every student in a school.

Tier 2 as an Avenue for MTSS Inclusion

One aspect of an MTSS framework that can be readily addressed in terms of students with low incidence disabilities is the provision of small group instruction, which is central to Tier 2 services. However, before doing so in detail, a topic that must be addressed is the lingering, inaccurate belief that students with disabilities – particularly those with low incidence disabilities - can only be provided effective instruction in a 1:1 arrangement.

Without question, a plethora of research has demonstrated that students with disabilities, particularly students with a moderate or more significant cognitive disability, can be provided effective instruction in a 1:1 arrangement (Stahmer et al., 2005). Furthermore, investigators have noted that elementary and middle school students with disabilities spend more time in 1:1 rather than small group arrangements (Dymond & Russell, 2004; Magiera & Zigmond, 2005), and that preschool students spend more time working with adults than peers (Hestenes & Carroll, 2000).

Nevertheless, a less well-developed research base does show that effective, efficient small group instruction can be presented to students with disabilities, including those with low incidence disabilities (Collins et al., 1991; Kamps et al., 1991; Ledford et al., 2012). In many instances, teachers of students with low incidence disabilities need training about this type of instruction (Ledford et al.). But, this need exists both separate from, and in addition to, empirically-based and persuasive arguments in favor of providing students with low incidence disabilities instruction in a small group arrangement.

These arguments include that fact that small group instruction (a) increases teacher-directed instructional time with students; (b) is more cost-effective than 1:1 arrangements; (c) sets the occasion for teaching appropriate peer interactions; (d) affords a student an opportunity to learn both his targeted content and that which has been targeted for a peer; and (e) allows students to experience the group instructional arrangements that are prevalent in general education classrooms and settings that are considered to be less restrictive along the continuum of alternative placements (e.g., resource rooms) than settings where 1:1 instruction is likely to predominate (e.g., a self-contained classroom) (Keel & Gast, 1992; Morse, 2020b; Polloway et al., 1986). This last argument is closely aligned with an additional argument that is central to this paper, which is that small group arrangements mirror those used in an MTSS's Tier 2 service delivery structure. Small group instruction, therefore, provides an avenue through which students with low incidence disabilities can be meaningfully included in a school's MTSS framework.

Tier 2 Small Group Instruction as the Standard

As was stated near the outset of this paper, in an MTSS framework the small group instruction that is presented in Tier 2 can be considered as setting the standard for the way that intensive, small group instruction is implemented in a school. Presently, work by the National Center on Intensive Intervention (NCII, 2013) has explained an approach to presenting a type of Tier 2 small group instruction that not only is evidence-based but also allows for a reasoned discussion of how intensive, small group instruction that is appropriate for students with low incidence disabilities can be designed and implemented such that it is considered to be part of an MTSS framework

Central to the National Center on Intensive Intervention's approach is the use of a standard protocol. A standard protocol can be thought of as a standardized, commercial-type program that results in the same empirically-based treatment being used for all of the students who comprise a small group because they demonstrate very similar learning problems. In other words, the treatment does not change from student to student. Procedural fidelity is crucial in terms of consistent adherence to such features of a standardized program as the frequency and duration of instructional sessions, size of the small group, instructional strategies used, and the content covered. Importantly, the protocol is supported by evidence that indicates it is effective with students needing remedial instruction (National Center on Intensive Intervention, 2013).

Nonetheless, data indicate that some students will not respond to a standard protocol, meaning the students will not demonstrate adequate academic achievement gains. When this occurs, the protocol needs to be systematically adjusted so that effective instruction, defined in terms of a student's demonstrated academic progress, is provided. In this context, adjustments refer to changes to the standardized features that were previously identified and that pertain to small group instruction. These adjustments occur during a data-based, recursive process. As increasingly more adjustments are made, the intervention is said to be more intense. Absent a universally agreed upon definition for intensive intervention (National Center on Intensive Intervention, 2013), it is defined and practiced somewhat differently (e.g., The IRIS Center, 2006). Hence, for the purposes of this paper it refers to changes to the conditions under which instruction is provided so that it becomes individualized and effective (Morse, 2020a).

Fuchs et al. (2017) put forth what they referred to as a taxonomy of intervention intensity as one example of the features (hereafter referred to as the components) involved in intensifying instruction in small group arrangements. The taxonomy is to be applied in two instances, one of which is relevant to this discussion. It is whenever progress monitoring data indicate that a student is not demonstrating adequate progress in terms of academic achievement after receiving instruction from Tier 2's standard protocol. This application is to result in more intensive, meaning individualized, instruction.

Taxonomy of Intervention Intensity and Tier 2 Services

Below the seven components from the taxonomy that are relevant to this discussion are explained briefly. For a more detailed discussion of the taxonomy, see Fuchs et al. (2017).

1. Strength. This component refers to the effect sizes obtained when standard protocols have been used with the types of students who need to receive Tier 2 services.

2. Dosage. This component focuses on to the number of opportunities a student is given to respond and receive corrective feedback during instruction. Both result from possible adjustments to the size of the instructional group, number of remedial sessions per week, and the duration of each session.
3. Alignment. The overarching focus of this component is the grade-level curriculum standards students must learn. A secondary consideration is instructional efficiency. In this context, efficiency refers to addressing all of a student's skill deficits while not spending time teaching skills that have been mastered.
4. Attention to transfer. This component addresses the meaningful transfer of what is learned during Tier 2 small group instruction. Meaningful transfer occurs when students can perform what is learned across other formats and circumstances, as well as make connections between mastered and related skills.
5. Comprehensiveness. Comprehensiveness involves the number of the principles of explicit instruction that the standardized program incorporates. Examples of the principles include the use of teacher-modeling, teacher support that is systematically faded, sufficient practice opportunities, and periodic cumulative reviews.
6. Behavior support. Behavior support consists of components involved with students' self-regulation and executive functioning (e.g., the demonstration of perseverance and high standards of coherence, such as asking oneself whether an answer makes sense). When necessary, behavior supports are employed to eliminate what are considered to be non-productive behaviors.
7. Individualization. With the student's year end goal in mind, this component involves adjusting the standardized program via a recursive, data-based process called data-based individualization (DBI).

Repurposing the Taxonomy for Students With Low Incidence Disabilities

One reason the approach involving a standard protocol with subsequent adjustments is not appropriate for students with low incidence disabilities is because the focus of the initial adjustments is the full remediation of a Tier 2 student's learning challenges. However, it must be noted that, when a Tier 2 student is chronically non-responsive to this approach, the outcome may be the use of the taxonomy such that its focus is on maximizing the amount of targeted learning outcomes a student acquires, and then maintains. The instructional arrangement that is used for this purpose may involve either a small group or a 1:1 pupil-to-teacher ratio. This circumstance supports repurposing the framework in the manner described in this paper for its use – from the outset - with students with low incidence disabilities.

A second reason why the approach involving a standard protocol with subsequent adjustments is not transferrable to students with low incidence disabilities is due to the absence of nearly any type of Tier 2 standard protocol, or its equivalent in terms of commercial academic programs, for these students. That is to say, Tier 1 scientifically-based commercial programs and Tier 2 standardized programs that have specifically been designed for use by these students are virtually non-existent. Rather, these students' experiences involving subject matter instruction, such as the teaching of reading and math, has been described as a series of ad-hoc experiences (Jimenez & Saunders, 2019; Ruppar, 2013). While work is being conducted to address this situation there is no expectation the situation will change on a large scale anytime in the foreseeable future (Spooner et al., 2019).

A result of this circumstance is that these students' teachers are accustomed to presenting academic instruction using what is referred to, with respect to Tier 2 and Tier 3 instruction in an MTSS framework, as a problem-solving protocol. This protocol has been described as a team-based, brainstorming process where instructional decisions are made on a student-by-student basis. Hence, matters pertaining to the frequency and duration of instructional sessions, size of a small group, instructional strategies used, and the content covered conceivably could vary from student to student.

Hence, although Fuchs et al.'s (2017) taxonomy of intervention intensity has been explained in terms of Tier 2 standard protocols and a focus on fully remediating students' academic achievement gaps, the taxonomy can be repurposed, and some of its components redefined, so that it allows for a discussion of how MTSS small group, intensive instruction can be designed and implemented to meet the academic instructional needs of students with low incidence disabilities. Repurposing the taxonomy involves using it, primarily, to design small group, intensive instruction to enable students with low incidence disabilities to maximize, maintain, and generalize targeted learning outcomes. The taxonomy's components can be redefined, only as necessary, to allow for a discussion of how a problem-solving protocol can be used in tandem with the taxonomy to meet the instructional needs of students with low incidence disabilities within an MTSS framework.

The remainder of this paper discusses each component of the taxonomy with respect to how it would be defined, and relevant matters addressed, so that small group, intensive instruction that is appropriate both in approach and implementation would be provided to students with low incidence disabilities. This information is intended to establish a foundation for the discussion of the small group instructional needs of students with low incidence disabilities within the context of a school's MTSS framework.

Strength

The definition for this component remains unchanged because educators still need to focus on identifying research-supported practices that are appropriate for use with students with low incidence disabilities. However, instead of effect sizes produced through research of standardized programs, the focus will be on evidence-based practices (EBPs) that have been established through an evidence-based review (Cook et al., 2009). For students with low incidence disabilities, the criteria that have been established for the purpose of identifying an evidence-based practice (EBP) through an evidence-based review could be thought of as being equivalent to the process of calculating an effect size.

An EBP may involve a single technique or several techniques that comprise a multi-component instructional strategy (National Autism Center, 2009). An EBP would be employed through a process known as a focused intervention approach (Wong et al., 2014).

Focused Intervention Approach. An explanation of a focused intervention approach to the use of evidence-based practices with students with low incidence disabilities provides a way for understanding how the problem-solving protocol might work in terms of presenting Tier 2 small group instruction. A focused intervention approach involves the application of a specific

evidence-based practice to a targeted learning outcome based on research that supports this application. An example would be the use of a response prompting procedure, constant time delay, to teach math skills to students with autism (Odom et al., 2012).

In a school program, this application occurs in an isolated manner in the sense that it does not happen among the trappings of a comprehensive, data-validated, standardized program that has been developed outside of the school. Rather, a teacher is left to her own devices to replicate, in some way, that type of effort. Considering the absence of evidence-based commercial programs for students with low incidence disabilities, this type of work will represent a major activity that teachers will perform to design and implement effective small group instruction.

Applying an EBP to Intensive Small Group Instruction. Given the diversity that exists among students with low incidence disabilities, a teacher will have to establish a rationale for the content she will teach during a small group lesson and the evidence-based practices she will use to teach the content. For example, in a small group math lesson the teacher might decide to use constant time delay to teach numeral identification, counting, and addition skills because (a) one or more students in the group have demonstrated a need to acquire or maintain one of the skills and/or (b) the students' variable instructional needs set the occasion for at least one student to incidentally learn content taught to another student. The teacher selects constant time delay because it has been identified as an evidence-based practice, and among the studies that support this designation it has been shown to be effective in teaching similar math content.

At one point in time during the lesson she might proceed in a linear fashion whereby one student completes trials designed to teach him to name a numeral, the next student counts the number of objects represented by the numeral, and a third student learns how to use the counting-on strategy to complete an addition problem that involves the target numeral as one addend and an altogether different numeral as the second addend. Each student can be taught how to observe the other students to either learn incidental information or maintain previously mastered content. Thus, in the small group lesson the acquisition and maintenance phases of learning are targeted for the students.

Dosage

Dosage is re-defined so that it includes opportunities for students to respond as well as ways for them to remain academically engaged. Its new definition also includes the instructor's use of error correction as opposed to corrective feedback.

Increased opportunities to respond (OTR), especially opportunities that result in instances of active student responding, remain an important aspect of this component due to the strong association between OTRs and the acquisition phase of learning (Archer & Hughes, 2011). Small group instructional strategies that allow for OTRs include choral responding, response cards, and quickly paced sets of massed trials during a student's turn to respond within a group.

Remaining academically engaged is added to this component's redefinition because this engagement sets the stage for the acquisition of incidental information, which is a key avenue to maximizing learned content. Incidental information refers to content that is presented during a

lesson but is not part of a student's targeted learning outcome. This information can be obtained in one of two ways: through either incidental learning or observational learning.

Incidental learning involves the acquisition of content that is simply presented in some manner during the instructional session while observational learning involves the acquisition of content that is taught to another student who receives reinforcement when he engages in an active, correct response. Keeping students academically engaged refers to having them demonstrate behaviors that indicate they are appropriately on-task but do not involve a teacher-directed response. These behaviors lead to incidental and observational learning. Examples of these behaviors include looking in the direction of other students who are responding, copying the spelling of a word before reading it (when reading the word is the target behavior), and sub-vocalizing another student's appropriate response.

Error correction replaces the term corrective feedback because of a key distinction that exists between the terms' definitions. Error correction involves providing the student with information about the correct response. Providing students information about correct responding is a central feature of acquisition phase instruction. Corrective feedback does not involve the presentation of information about the correct response. Corrective feedback only involves a contingency that informs the student her response was incorrect (e.g., "No," "Try again").

Alignment

Wolery et al. (1992) stated that a noteworthy task that needs to be performed by the personnel who establish a school program for a student with a low incidence disability, such as a student's IEP team, is to identify the most important learning outcomes from among the vast array of important outcomes that would be appropriate for the student to master. This statement must be considered in conjunction with the fact that these students will learn less content relative to their typical peers.

Accordingly, one way the definition for alignment is revised is to indicate that, for students with low incidence disabilities, there is a focus on the general education curriculum but to a much lesser degree than is the case for the majority of students who receive intensive, small group Tier 2 instruction. This is because, ultimately, these students are expected to master the entirety of the general education curriculum. Alignment for students with low incidence disabilities needs to be described in terms of how small group, intensive instruction focuses on their IEP goals and objectives. To the extent that the goals and objectives reflect alternate achievement standards that are tied to the general education curriculum, the small group instruction will be aligned to this curriculum.

A second way this component of the taxonomy is redefined is to include opportunities for students to engage with previously learned content. Since one learning characteristic of students with low incidence disabilities is a difficulty maintaining learned content, small group, intensive instruction must allow for activities that involve re-engaging with content that already has been mastered.

Attention to Transfer

Historically the term generalization, and the concept it represents, has been used more so than terms like attention to transfer during discussions about appropriate instruction for students with low incidence disabilities. Furthermore, difficulty generalizing learned content has been identified as a learning characteristic of these students.

While the definition for this component of the taxonomy would remain unchanged, it would be replaced with the more familiar term generalization. For students with low incidence disabilities, generalization refers to their ability to perform learned content across people, settings, and materials that extend beyond the original instructional arrangement. In terms of settings, the emphasis would be generalization to settings well beyond the general education classroom since the focus will not be long-term, ongoing success in the general education curriculum.

Various strategies have proven to be effective in teaching students with low incidence disabilities how to generalize learned content. One organizational scheme that has been used to describe these strategies is as follows:

- the setting where students are taught (e.g., vary the location of instruction and instructors who provide it);
- the antecedents used (e.g., provide appropriate examples and non-examples of a concept, vary the teacher's directions, and systematically fade necessary prompts);
- the target behaviors taught (e.g., teach those that are useful to students beyond the teaching setting, allow for more student independence, and are likely to be reinforced in the natural environment); and
- the consequences involved (e.g., use natural reinforcers, fade to a natural schedule of reinforcement, and teach students to self-reinforce) (Wolery et al., 1988).

Regarding the aspect of this component that addresses students making connections among curriculum content, these connections will be addressed by teachers who rationally and creatively design lessons that account for the students' diversity. The small group math lesson described previously is one example of doing so.

Comprehensiveness

As a result of its strong evidence base, explicit instruction serves a central purpose in the education of all students with disabilities. Thus, the definition for this component of the taxonomy remains intact. However, in order to meet the need to design small group, intensive instruction so that students with low incidence disabilities not only master maximum content but maintain it, the elements of explicit instruction that have proven to be effective with skill acquisition and maintenance would be enhanced.

Strategies such as teacher modeling, the use of prompts that are faded, and error correction would be used to emphasize skill acquisition since each provides students with information about how to correctly perform a task. This type of information is what students need during the acquisition phase of learning. To enhance students' maintenance of previously acquired content, strategies such as providing sufficient practice, conducting systematic reviews, using natural

antecedents and consequences, and changing reinforcement schedules (e.g., from continuous to variable) would be employed.

Behavior Support

Comprehensive reports of investigations involving students with low incidence disabilities in small group arrangements have noted that the participants exhibited appropriate group participation behaviors at the outset of the study (Ledford et al., 2012). Knowing this as well as the historical emphasis on using a 1:1 arrangement to present academic instruction to these students, it is safe to assume that many educators would benefit from being made aware of strategies for teaching certain students with low incidence disabilities how to behave so that they could interact appropriately with everyone in a group and simultaneously benefit from the direct and incidental learning opportunities that are provided.

This viewpoint means that this component of the taxonomy needs to be redefined, and its focus reversed. The redefinition states that students should be taught ways to engage in appropriate group participation behaviors for the reasons just mentioned, as opposed to simply providing them with behavior supports that are designed to decrease occasional instances of non-productive behavior. Educators would be proactive by using antecedent-based interventions (ABIs) that are designed to enhance the probability that a student will engage in appropriate, targeted social behaviors (e.g., turn taking and ongoing engagement). Example ABIs include (a) visual supports for designating a place to sit or stand during small group instruction, or the behaviors one is to display to indicate she is paying attention; (b) planned interspersing of low probability tasks among high probability tasks; (c) use of high interest content, as well as a quick instructional pace with frequent reinforcement; and (d) the design of the instructional session so that it is an appropriate length for the majority of the students but has variable entry and exit points to address individual student's needs in this regard.

The foregoing would be the first point of emphasis of this component, followed by a focus on students' self-regulatory behaviors. Systematic, ongoing, explicit instruction will have to be presented to teach students with low incidence disabilities all aspects of self-regulation. This instruction would be presented throughout each school day and across school years. It would be incrementally introduced during small group instruction.

Individualization

This taxonomy component would be redefined so that it emphasizes educators' engagement in ongoing assessment to determine how to structure and present small group, intense instruction to a student with a low incidence disability in a manner that is consistent with a problem-solving protocol. Here is where the differences between using a problem-solving protocol instead of a standard protocol at the outset of Tier 2 become most stark. When a problem-solving protocol is employed, existing instructional practices, rather than a standardized intervention platform, are altered. Furthermore, the long-term focus of instruction is a goal that pertains to a student's acquisition, maintenance, and generalization of as much academic content as possible. This differs from a focus on a goal that is tied to a student's return to the general education curriculum and sustained grade-level performance.

The application of the problem-solving protocol in this manner would involve a microscopic analysis of variants involved in the presentation of small group, intensive instruction that extend well beyond the taxonomy's seven components. Examples of variants to analyze include:

- the use of student-specific group entrance and exit strategies (e.g., some students enter and exit the group at different times);
- how the antecedent phase of instruction can be presented so that a student engages in an attentional response to be given an opportunity for incidental and observational learning;
- behavioral supports that prove to be effective in maintaining a student's appropriate displays of behavior throughout the small group lesson;
- the amount of incidental information to be presented during an instructional session;
- individualized reinforcement; and
- the length of a task directive and time allotted for a student's response.

Over time a teacher would learn which variants within small group instruction would be appropriate to tweak on behalf of which students. The result would be individualized instruction that exemplifies the use of a problem-solving protocol in an MTSS framework.

Conclusion

One can understand how basic knowledge about an MTSS might result in cognitive dissonance for certain school personnel. On the one hand, an MTSS has been advertised as being an approach that accounts for the performance of every student in a school. Yet, on the other hand, an MTSS's emphasis on preventative, remedial approaches that are focused on students' general education placement and enduring grade-level functioning runs counter to what school personnel have experienced – and what has been reported - with regards to the learning outcomes of certain students, such as those with low incidence disabilities. Hence, an apparent contradiction naturally emerges for which no current guidance exists for the resolution of this contradiction.

While at first glance it might appear that students with low incidence disabilities cannot be meaningfully included in an MTSS framework, further examination of this topic establishes that this is not the case. By repurposing and redefining existing tools, educators can be shown how the instructional needs of students with low incidence disabilities can be meaningfully addressed in an MTSS framework. Doing so allows the framework to be fully inclusive – both in terms of its ability to account for every student and allow for meaningful collaboration between school staff. This repurposing and redefinition of existing tools functions as a starting point for additional discussions pertaining to other MTSS topics, such as ongoing progress monitoring. Like the MTSS approach, these discussions can be used to establish a fully inclusive approach to the design and implementation of educational services throughout a school.

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Spelling Interventions for Elementary and Secondary Students with Learning Disabilities: A Systematic Review

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Abstract

Previous research investigating spelling interventions for students with learning disabilities (LD) are synthesized. A comprehensive search of the professional literature between 1990 and 2020 yielded a total of 19 elementary studies and 20 secondary intervention studies that delivered spelling interventions to students with LD and measured spelling outcomes. Additionally, this review of the research examines, journal outlets, intervention setting, intervention type, design, and outcome measures, related to the aforementioned spelling interventions. Findings revealed that the topic of spelling interventions for students with LD presents an ecological balance among journal outlets. Additionally, interventions employed, and measures used to assess spelling outcomes, were diverse among the elementary and secondary level. Implications and directions for future research are discussed.

Keywords: elementary, interventions, learning disabilities, secondary, spelling, systematic review

Spelling Interventions for Elementary and Secondary Students with Learning Disabilities: A Systematic Review

Accurate spelling is arguably one of the most critical, yet difficult skills in written communication. The written English language is characterized by rules of phoneme-grapheme correspondence (Nagy et al., 2003; Thompson et al., 2018). To convey a message, spellings must reflect correct sounds accurately and reliably with appropriate orthographic representations of the sounds in the words being spelled. A student's acquisition of the sophisticated knowledge of orthographic symbols, sounds, and syllable patterns is required to spell words correctly (Apel et al., 2012). Spelling development is a progression of code-based skills, that for most students, begins with phonemic awareness instruction. This instruction serves as a catalyst for the awareness of and the ability to manipulate the sounds in spoken language. The alphabetic principle (Vecca et al., 2006) is the awareness of letter names and the understanding that each of the letters have an associated sound. Thus, the alphabetic principal is the grassroot to phonological awareness and the recognition that phonemes (e.g., letter sounds) are related to graphemes (e.g., written symbols). This ability to separate words into their individual sounds (phonemes) has been identified as a predictor of spelling achievement (National Institute of Child Health and Human Development, 2000).

Consequently, spelling is not only interconnected with spelling and written expression, but also reading. While reading and spelling have been documented as a closely related process (Martins et al., 2013; Toste et al., 2019), the development of spelling, or encoding, is characterized as a more challenging task than reading, or decoding (Birch & Fulop, 2020). More specifically,

systematic instruction in accurate spelling can have a positive impact on word attack skills and written compositions (Graham & Santangelo, 2014). As a result, learning accurate spellings is a vital component to the repertoire of a student's academic program, however, many students with learning disabilities struggle to obtain a repository of the phonological structure of language. Thus, mapping the sounds of language to print is challenging for these students (Suggate, 2016). To frame with review, an overview of the relationship between spelling and students with learning disabilities (LD), emphasizing studies in both elementary and secondary contexts will be presented. Next, previews reviews and meta-analyses investigating the role of spelling for students in elementary and secondary grades will be discussed. Then, the methods used to identify, evaluate, and synthesize the studies included in this review will be described. Finally, the results will be presented, which include (a) journal outlets, (b) intervention setting, (c) intervention type, (d) research design, and (e) measures. To conclude, a brief critique and recommendations for future research will be provided.

Spelling for Students with LD

Students with learning disabilities (LD) make up the largest group of children and youths between the ages of 3 and 21 years served under IDEA. As such, students with LD make up 35 percent of the 6.6 million students receiving special education services (McFarland et al., 2017). Although the characteristics of a learning disability present across a multitude of environments and tasks, many of these students struggle to acquire proficiency of spelling skills (Vaughn et al., 2011; Vaughn & Wanzek, 2014). Students with LD often experience even greater difficulties than their nondisabled peers in learning to spell. Additionally, older students with LD spell a substantially lower percentage of grade-level text words correctly compared to their peers without disabilities (Skarr et al., 2012). Further, not only do students with LD present difficulty spelling words in isolation, but they also present difficulty spelling words in text (Graham et al., 2016; Graham et al., 2017).

Additionally, students with LD have been characterized as often displaying greater difficulty than their peers without disabilities in developing appropriate spelling strategies, as they often employ fewer effective methods for spelling, which ultimately result in negative writing performance outcomes (Herbert et al., 2018). This deficit suggests that educational staff working with students with LD must use effective strategies for teaching spelling.

It is proposed that this spelling difficulty is due to the demand for students to memorize more than 70 letters, combinations, and orthographic symbols to spell phonemes (August & Shanahan, 2017). Further, due to the bidirectional relationship between reading and writing and the phonological skills that overlap considerably in reading and writing, typically students with spelling disabilities possess phonological deficits that also have a negative impact on reading performance (Bailey et al., 2021). Because students with LD may have difficulty mastering the phonological structure of language required to map the sounds of language to text, reading and spelling become challenging (Suggate, 2016). This challenge is so pervasive that spelling has been documented as one of the most common difficulties for students with LD (Vaughn et al., 2011). Therefore, knowledge concerning effective instructional approaches and interventions in spelling is necessary for increased spelling proficiency for students with LD (Graham et al., 2014; Reid et al., 2013).

Previous research acknowledges that while students with LD progress through the same stages of spelling development as their typically developing peers, students with LD typically advance through this process at a slower rate (Dewitz & Jones, 2013). This postulates that some students with disabilities will require instruction in spelling skills at an older grade level than their typically developing peers. The lack of specific instruction during the appropriate developmental and instruction level could further hinder spelling growth, and therefore, foster more challenges (Castles et al., 2018). This notion asserts that it is even more critical that students with disabilities who present deficits in spelling receive instruction throughout various stages of learning. As such, direct and explicit instruction with practice in spelling may be necessary for students with disabilities well beyond the age that their typically development peers advance past such instruction and practice.

This need for direct and explicit instruction becomes even more paramount as students with LD advance to middle and high school grades. As students progress to the secondary grades, spelling is seldom taught directly, yet the Common Core Standards for English Language Arts assert that secondary students should "demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing," which highlights the command for spelling proficiency in Grades 6 through 12 (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, p. 51). While spelling is not expected to be explicitly taught in the secondary setting, many students with LD have difficulty spelling accurately and fluently- challenges that typically persist into adulthood (Graham et al., 2016; Graham et al., 2017; Maughan et al., 2009).

Existing Reviews of the Literature

Wanzek and colleagues (2006) explored the impact of reading and spelling interventions on spelling outcomes for students with LD. Their systematic review yielded 19 studies from 1995 to 2003 and focused solely on participants with LD. The researchers determined that interventions encompassing spelling strategies, extensive practice with spelling patterns, and word practice methods produced the largest effect sizes on spelling outcome. Further, the results of this analysis proposed that reading interventions inclusive of phonics or morphological components, immediate corrective feedback for misspelled words, and the use of computer-assisted instruction were favorable and produced positive spelling outcomes for students with LD. While this review incorporated interventions spanning grades K-12, the authors did not explicitly disaggregate between elementary and secondary grades in their analysis.

Graham and Santangelo (2014) examined the effects of spelling instruction on reading, writing, and spelling outcomes for both students with and without disabilities in Grades K-12. They found that formal spelling instruction increased spelling outcomes when compared to groups either without instruction or with incidental instruction while also positively impacting reading outcomes. Similar findings were revealed by Weiser and Mathes (2011) during their synthesis of the impact of encoding instruction (i.e., direct spelling instruction on phoneme-grapheme correspondences in writing using manipulatives) on reading and spelling outcomes for elementary at-risk students and older students with learning disabilities who were reading below a third-grade level. Encoding instruction was determined to be an effective method for increasing students' understanding of the alphabetic principle, advancing phonemic awareness, and growing reading and spelling skills. While this review is comprehensive in nature, it focuses on the

impact of spelling instruction on reading, writing, and spelling outcomes, rather than solely spelling. Additionally, this meta-analysis included only true-and quasi-experiments, potentially imposing bias on the selection.

The synthesis conducted by Wanzek and colleagues (2006) was replicated by Williams and colleagues in 2017, as the authors also sought to examine the effects of spelling and reading interventions on spelling outcomes for students in grades K through 12 in the years spanning 2004 and 2014. This review yielded 10 studies and results varied form ineffective to highly effective. The findings of the review also demonstrated that when students are taught how to spell using explicit instruction or self-correction strategies, their spelling of taught words improved. Additionally, studies in this review did not focus on students with LD.

Galuschka and colleagues (2020) conducted a meta-analysis and systematic review on the effectiveness of spelling interventions for students with dyslexia. This review included 34 controlled trials spanning children, adolescent, and adult participants. The results of this review indicated that treatment approaches that included phonics, orthographic, and morphological instruction had the greatest impact on spelling performance, while a significant impact of interventions employing memorization strategies were not able to be confirmed. While this review focuses on spelling interventions, it does not provide insight for students with LD. Further, this review includes adults, rather than just K-12 students.

Most recently, Bray and colleagues (2021) conducted a systematic review focusing on handwriting and/or spelling interventions for elementary children with a specific learning disability (SLD). After inclusion criteria were imposed on the literature, 11 studies, six of which exclusively examined handwriting, three centered on spelling, and two of which combined spelling and handwriting, were collected. Due to the physical nature of writing, the interventions were coded into three categories, (a) tablet-based, (b) sensorimotor, and/or (c) self-management interventions. Findings indicated that interventions that employed vehicles for self-management were most effective. Additionally, encouraging autonomy and participation were determined to be effective strategies for improving literacy outcomes for students with SLD. While this review includes students with LD, the population is inclusive of only elementary students. Additionally, the purpose of the review is more focused on the transcription-nature of spelling (e.g., handwriting) rather than the cognitive components of letter-sound correspondence.

The Current Synthesis

Prior synthesis most notably provided effect sizes to demonstrate the relationship between spelling interventions and reading (e.g., Graham & Santangelo, 2014; Wanzek et al., 2006; Williams et al., 2017) or spelling and handwriting interventions for students with LD. These reviews and meta-analyses revealed gaps in the literacy literature. While Graham and Santangelo (2014), Wanzek and colleagues (2006), and Williams and colleagues (2017) were comprehensive in their search procedures, including the entire conventional grade school range (e.g., K-12), the prescribed inclusion criteria for rigorous studies, including only studies utilizing a treatment-comparison or single-case design (Wanzek et al., 2006) or only a treatment-comparison group (Williams et al., 2017) could have a limiting impact.

Although reviews and meta-analyses have included participants identified with LD or as struggling spellers, none have yet to be as comprehensive in nature by comparing the nature of spelling interventions in elementary and secondary settings for the targeted population. Additionally, because this review did not seek to calculate effect sizes, less parameters were set for the inclusion criteria, allowing for a larger sample of studies to be included. Further, the imposition of spelling intervention affects across specific subject areas, such as reading, and writing were not included. Therefore, the inclusion of studies focusing on the impact of spelling interventions across unbound parameters is needed. The purpose of this systematic review was to expand on the research conducted by Williams and colleagues (2017) which surveyed the effect of spelling and reading interventions on spelling outcomes for students with LD in Grades K-12. The current review investigates and compares the scope of spelling interventions for students with LD in grades K-12 from 1990 to 2020. This systematic review was guided by the following research question: To what extent do spelling interventions vary in nature for students in elementary grades with LD compared with students in secondary grades with LD?

Method

The purpose of a systematic review is to not only be comprehensive in nature, but to also answer one or more targeted research questions. This review is unique to other types of reviews due to the primary intention to reduce bias in the selection process, critique the qualified research, and then to provide a summary. Additionally, a systematic review is said to "impose discipline on the review process" (Littell et al., 2008, p.10). The purpose of this systematic review is to identify holes or gaps in the knowledge base (Petticrew & Roberts, 2006). These gaps will be discussed further in the *discussion* section of this review.

Search Procedures

Four electronic databases were searched for relevant work, which included: (a) Education Research Complete via EBSCO, (b) APA PsychInfo, (c) ERIC, and (d) Psychology and Behavioral Sciences Collection. Combinations of key terms, included, "*learning disabilit**," "*disability**," "*learning disability* or *learning difficulty*," "*dyslexi**," "*spell**,","*encod**," "*interventions* or *strategies* or *best practices*," "*peer tutoring* or *peer teaching* or *peer education* or *peer assisted learning*," "*alphabetic phonics*," "*orthography*", "*multisensory*," "*word mapping*," " and "*schema*." Combinations of search terms using the conjunction "or" were auto-suggested by the EBSCO database. The purpose of using an asterisk as a search practice was to truncate terms, such "disability*," to include other encompassing words, such as "disability" and/or "disabilities."

This list of acceptable publications was limited to peer-reviewed sources, empirical studies, and research involving one of the conventionally defined elementary and secondary grades. Specifically, empirical research captures data through observation or experiment**.** This type of research often employs quantitative methods to collect data and explores relationships between variables to address a problem and answer a research question or questions. Due to the comprehensive intent of this review, publication for years spanning 1990 through 2021 was applied. Titles and abstracts were scrutinized to determine initial eligibility. Once a body of studies was identified, each study was further examined to determine if it met the inclusion

criteria. Additionally, ancestral searches (Cooper, 2010) of syntheses by Williams et al., (2017) and Qanzek et al., (2006) were conducted.

Inclusion criteria. To be included, articles had to be peer-reviewed, empirical research, and focused on either elementary or secondary grades (K-12). Studies were determined to be coded as elementary if they were inclusive of grades 1-4 and secondary if they were inclusive of grades 5-12. Because some studies did not list grades, but rather ages, student ages 11-12 were considered as secondary. Further because some studies included a range of ages, participants as young as 9 were also considered as secondary if the study spanned the ages of at 9 through at least 12.

Although this review was limited to students with a qualifying learning disability, studies that included disabilities, such as Other Health Impairment (OHI), were only included if the research method employed was single-case and the other participants were identified as having a learning disability. Consequently, quantitative studies that included students with LD, but did not disaggregate data according to disability identification were not included in the study. Additionally, due to differing state criteria for students with disabilities, students identified as having a writing disability were included. Additionally, due to the nature of dyslexia and its characteristics that often result in spelling deficits (Berninger et al., 2015), studies examining spelling interventions on this population of students were also included in this review. Due to the unique orthography of the English language, only studies involving English-speaking students in the United States were included.

Exclusion criteria. Those investigations that focused on writing achievement specifically, dysgraphia, the physical or occupational nature of writing, such as spacing, and those inquires dedicated to the critique and/or development of spelling assessments or writing assessments, were not included in this review. Students identified as having complex communication needs, students with speech/language impairments, severe disabilities, such as an Intellectual Disability or Multiple Disabilities, or those students otherwise identified as “struggling” or “at-risk” were also not included as part of this review. Also, students identified as ELL, English Learners, or “linguistically diverse,” were excluded. Further, studies examining the effect of teacher professional development and coaching on student writing and spelling performance were omitted. Moreover, interventions that incorporated grapheme-phoneme correspondences as an approach to reading and reading comprehension were not included. Because studies were limited to either elementary or secondary students, this review excluded adults or post-secondary students and preschool students. Additionally, longitudinal studies investigating the effects of phonological awareness on spelling in later grades were excluded. Studies outside of the United States were not considered for this research. These inclusion and exclusion criteria resulted in 39 studies for this review.

Data extractions and critical appraisal. An Excel spreadsheet was created to capture and organize the following identifying information for the 19 approved elementary studies and the 20 approved secondary studies: (a) features of instructional delivery, (b) journal outlets for dissemination, (c) research methodology, (d). A critical appraisal of the 48 studies that were determined to meet all of the inclusion/exclusion criteria illustrated below was then conducted in an effort to interpret the data, results, findings, and to identify biases. The organization and the

decision for categories and themes that are displayed in the literature review were determined based on the research question.

This systematic review adopted the PRISMA statement (Preferred Reporting Items for Systematic Reviews and Meta-analyses; Moher et al., 2010), which is illustrated in Figure 1, to aid in the critical appraisal of publications and the reporting of the studies extracted and examined. An initial data-base search yielded 1,067 results, which resulted in 1,038 results after the duplicates were removed. All 1,038 articles were screen based on the inclusion and exclusion criteria, which eliminated 994 articles. The remaining 44 articles were further evaluated, which resulted in the elimination of an additional five articles, resulting in a total of 39 studies to be included in this synthesis.

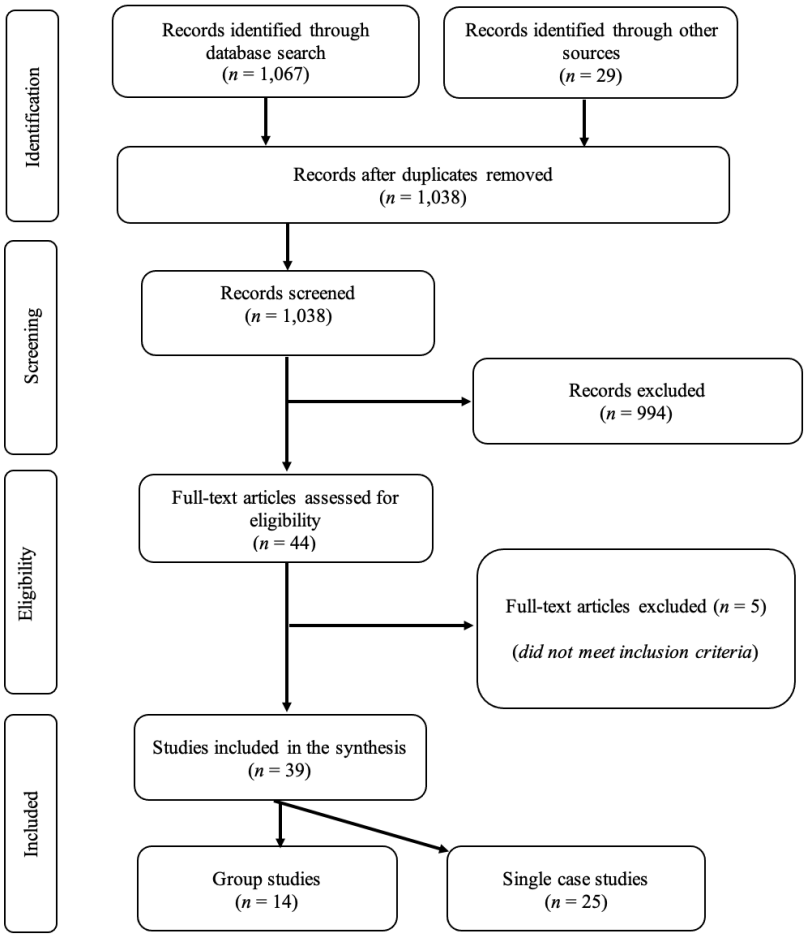

Figure 1
The PRISMA Statement for Reporting of Systematic Reviews and Meta-analyses

Note. Adapted from Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Int J Surg*, *8*(5), 336-341.

Coding Procedures

The author employed comprehensive coding procedures to organize significant information extracted from each study. The code sheet was used to record information on variables including participant information (i.e., grade, age), setting (i.e., elementary, secondary), design information (i.e., group design, single-case design), and intervention information (i.e., type described in text). Initially, information extracted for each of the categories was coding using open codes in an Excel Spreadsheet. After initial codes were inputted, the author then scrutinized codes for uniformity of descriptions and findings. Upon completion of the coding, the studies were summarized into a table format. Table 1 illustrates a summary of each intervention study at the elementary level. Table 2 offers a summary of each intervention study conducted at the secondary level.

Results

In this section, the results based on a comprehensive search of the professional literature between 1990 and 2020 are presented. The search yielded a total of 19 elementary studies and 20 secondary intervention studies that delivered spelling interventions to students with LD and measured spelling outcomes. Results examine journal outlets, intervention setting, intervention type, design, and outcome measures related to spelling interventions for students with LD.

Journal Outlets

Journal outlets for spelling interventions included 20 different journals ranging from the *Journal of Behavioral Education* to the *Journal of Special Education*. The number of different journal outlets for spelling interventions for students with LD at the secondary level was 13, with the *Journal of Behavioral Education* yielding the most studies with 3. *Education Research Quarterly, Annals of Dyslexia,* and *Journal of Learning Disabilities* each uncovered two studies. Studies at the elementary level spanned 9 different journals, with the *Journal of Learning Disabilities* being the primary outlet, with four studies. The *Journal of Behavioral Education* and the *Journal of Learning Disabilities Quarterly* received the second most hits, as three studies were discovered in each of these journals. The vast variety of journal outlets appears to demonstrate what Duke and Mallette (2001) would consider an "ecological balance," as evidenced by the seemingly lack of association between the variables of the journals, as the similar topic and population were published in diverse journal outlets.

Intervention Setting

A one-on-one setting was the most popular intervention setting in the elementary environment with 7 out of the 19 studies executing the intervention in this way. "Resource rooms" were the second frequented location with "resource room" yielding 3 studies. One study stated the intervention setting as "self-contained," with three studies describing the setting as "learning disabilities classroom," "learning support classroom," and "pull out" although, it can be argued that these settings are relatively comparable. One elementary study took place at an out-patient clinic at a university. Additionally, one study failed to mention the setting for the intervention.

Like the elementary studies, for the secondary studies, a "resource room" was overwhelmingly the majority setting, with 6 of the 20 studies being carried out in this setting. Three of the studies described the setting as a "self-contained" classroom and one mentioned the setting as a "special education classroom." Three of the secondary studies neglected to mention the setting of the

intervention. Additionally, two studies took place at a university clinic and one took place at a boarding school.

Intervention Design

Single-case design was the overwhelming majority of design methodology in both elementary studies and secondary studies. Of the 19 elementary studies, 13 utilized single-case design and of the 20 secondary studies, 12 employed a single-case design. Three of the 13 elementary single-case studies used a combined single-case approach, while just one of the 12 secondary studies enacted a combined single-case approach in order to answer their research question. Although both elementary and secondary studies included experimental designs, just one study (Reid & Harris, 1993) applied an experimental design in a randomized group manner.

Intervention Type

As with the journal outlets, the intervention type among spelling interventions was immense, with 15 noted different elementary spelling interventions. The most common intervention focused on some type of error correction, such as Cover, Copy, and Compare (n = 3) and Error Correction (n = 1), and four different interventions focused on variations of handwriting, transcription, and/or composition skills. The next most popular intervention involved instructional programs, such as *Read Well* (n = 1), Spelling Mastery (n = 1), Auditory Discrimination in Depth Program (ADD) and Embedded Phonics (n = 1), which were included in three different studies each. Word processing interventions or variations of word processing and word prediction software was the next most popular intervention containing two different studies.

Similar to the most common elementary intervention, corrective spelling interventions, such as Cover, Copy, and Compare (n = 4) and self-correction variations (n = 3) were the most common. Five studies utilized a form of assistive technology, such as speech recognition, various spell checkers, and/or word prediction software. Of the secondary interventions, three contained different types of instruction programs, including The Dyslexia Training Program, a computerized instructional program, and *Expressive Writing*. It is striking to note that self-correction strategies, such as Cover, Copy, and Compare, were the most widely used at both the elementary and secondary level. Other noteworthy comparisons are the degree in which instructional programming was used, which was similar among elementary interventions (n = 3) and secondary interventions (n = 3). Additionally, assistive technology-based interventions were more widely used at the secondary level (n = 5) compared to the elementary level (n = 2).

Measures

The spelling intervention studies examined initiated a multitude of measures that ranged from standardized measures, teacher-generated word lists, content area vocabulary words, compositions, and modified wordlists. Although studies spanning elementary and secondary grades employed standardized spelling measures, such as the Wide Range Achievement Test (WRAT-3), *Word Scrambles of the Test of Orthographic Competence*, AIMSweb 5th grade word lists, other studies utilized measures that not only lacked standardization, but also lacked clarity. Six of the 20 elementary studies described spelling measures in rather ambiguous terms, such as "students' spelling words," "weekly spelling quizzes," or "spelling words selected from the social studies series, *The United States Past and Present*." Studies extracted from the secondary

level were also peppered with ill-defined measures, such as “weekly tests,” “grade level spelling words,” or “vocabulary packets used in a current events class.” Of the 20 elementary studies, 3 utilized student compositions as their spelling measure. These compositions ranged from picture-word prompts to dialogue journals. Four of the 19 secondary studies also utilized student compositions as their spelling measure, however, of the four studies, two studies also utilized other standardized measures, such as the TOWL-3 and TWS-3.

Discussion

A systematic review was conducted to produce a comprehensive examination of the empirical studies that demonstrate the relationship between spelling interventions and student outcomes of elementary and secondary students with learning disabilities, including dyslexia. The results of this review demonstrate that interventions focusing on spelling for students with LD are diverse, and therefore, dissemination outlets are plenty. This further highlights an ecological balance (Duke & Mallette, 2001) within the field of special education. Resource rooms and one-on-one settings were the primary locations in which the interventions took place. This location is reasonable given the requirement for specialized instruction for students with qualifying disabilities, however, it notes points for concern given federal mandates for inclusive practices. The types of spelling interventions varied, although most of the interventions focused on a memorization technique. The array of interventions holds the potential for educators to choose among various options to best meet the unique needs of the learner. Lastly, while a host of outcome measures was demonstrated in the literature, many were thwarted with reliability and validity concerns. Many of the outcome measures were largely constructed by teachers or from seemingly ambiguous wordlists.

Limitations and Directions for Future Research

The conclusions that can be extracted from this synthesis are hindered by the research designs and methods utilized in the primary studies. Few studies employed a comparison group in order to determine the effectiveness of a spelling intervention, while the majority of studies utilized single-case designs. The nature of single-case designs is not necessarily appropriate for generalization to larger populations, and effect metrics have inherent limitations when comparing and synthesizing findings from such designs. More high-quality randomized group design studies would be advantageous for determining the effectiveness of spelling interventions for students with LD. In addition, it would be valuable for the field if results are disaggregated for this population of students in larger randomized design studies.

Also, students in grade 4 were the dominant participants in the studies examined. It would be of value for research to examine younger students and students at the secondary levels. Because students with LD often struggle with spelling, it is vital to resolve how interventions can increase their spelling outcomes. Future research in these areas will add to the body of literature and strengthen evidence in terms of the effectiveness of specific interventions for students with LD.

Further, this synthesis did not include the impact of reading interventions on spelling outcomes for students with LD. Although the reciprocal relationship between reading and spelling is known (Graham et al., 2002; Graham & Santangelo, 2014; Noell et al., 2006; Santoro et al., 2006; Weiser & Mathes, 2011), this relationship has not been investigated entirely for students

with LD. It would be valuable for future research to not only address this relationship, but to examine the degree in which spelling interventions could affect reading outcomes and vice versa (Weiser & Mathes, 2011).

The majority of the studies included in this synthesis utilized a researcher-created measure of spelling or vaguely described the measure as a "weekly spelling list." Often, these measures are proximal and typically are only evaluative of what students learned during the intervention, which generally shows stronger effects. While these methods offer valuable information regarding the degree of the participants' knowledge of the words learned, this process is unable to capture the participants' performance compared to their peers. Further, many of the studies focused solely on the accuracy of words taught and did not investigate the transfer of skill to unknown or untaught words. Future research should seek to investigate not only performance, but also the generalization of skills taught in the intervention.

Although this synthesis yielded intervention results pertaining to assistive technology, a potential limitation could be that neither technology nor computer-assisted or other similar terms were included as part of the search procedures. This presents the awareness that studies involving technology could have been unintentionally excluded. Given the seemingly exponential increase in technology over the past decade, more research is needed to determine the potential outcomes of technology on spelling achievement for students with LD.

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About the Author

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Table 1
Spelling Interventions: Elementary

Author(s)/ Year	Journal	Grade (n)	Setting	Intervention	Design	Measures
Vaughn et al., 1993	*Journal of Learning Disabilities*	3rd – 4th (24)	One-on-one	Writing, tracing, and computer keyboarding	One between (LD, NLD) and two within (time: posttest, follow-up; condition: writing, tracing, computer) repeated-measures analysis of variance	Individual word lists
McComas et al., 1996	*Journal of Applied Behavior Analysis*	Ages 7-10 (4)	University-based out-patient clinic	Rhyming words (RW) vs. Rhyming words/sample spelling (RW/SS) vs. Rhyming words/sample spelling/self-generated (RW/SS/SG)	Brief multielement designs	Standard Reading Inventory (SRI) spelling lists
Grskovic & Belfiore 1996	*Journal of Behavioral Education*	4th (1) & 5th (4)	Self-contained	Error correction	An alternating treatments design	D.C. Health and Company (1990) spelling series
Berninger et al., 1998	*Learning Disability Quarterly*	3rd (48)	One-on-one	Computer response mode	Experimental	Words taken from Graham et al., 1993, 1994 lists of high-frequency words

MacArthur, 1998	*Learning Disability Quarterly*	Ages 9-10 (5)	Not explicitly stated	Standard word processor vs. word processor with speech synthesis and word prediction	Multiple-baseline design combined with a withdrawal design	Dialogue journals
MacArthur, 1999	*Learning Disability Quarterly*	9–10-year-olds (3)	Students' classrooms	Handwriting, word processing (WP), & word prediction (PR)	Alternating treatments design	Journal entries of student chosen topics
Abbott & Berninger, 1999	*Annals of Dyslexia*	4th (4), 5th (4), 6th (10), & 7th (2)	One-on-one	Structural analysis and alphabetic principal vs. only alphabetic principal	Two-treatment conditions	Wechsler Individual Achievement Test Spelling Subtest & Wide Range Achievement Test-3
Joseph, 1999	*International Literacy Association*	2nd (3), 3rd (2), & 4th (1)	One-on-one	Word Boxes	Multiple baseline across subjects	"Specific quizzes" of 10 words
Brooks et al., 1999	*Learning Disability Quarterly*	3rd & 4th (17)	One-on-one	Transcription vs. composition skills	Pre/posttest	WIAT & WRAT-3
Telecsan et al., 1999	*Journal of Behavioral Education*	4th grade (1) & 5th grade (5)	Dyads – Resource room	3 second delay and a visual model prompt	A multiple probes design across behaviors	Spelling words selected from social studies series, *The United States Past and Present* (1978)
Darch et al., 2000	*Journal of Instructional Psychology*	"Elementary" (30)	"Learning disabilities classroom"	Spelling Mastery	Experimental	2nd grade spelling words from Spelling Mastery

Torgesen et al., 2001	*Journal of learning disabilities*	Ages 8-10 (60)	One-on-one	Auditory Discrimination in Depth Program (ADD) & Embedded Phonics (EP)	Two-group design	& Laidlaw Spelling Program Spelling subtest from the Kaufman Test of Educational Achievement
Taylor & Alber, 2003	*The Behavior Analyst Today*	1st grade (4)	Dyads	Reciprocal Classwide Peer Tutoring	ABAB reversal design	Weekly spelling tests
Kubina et al., 2004	*Journal of Learning Disabilities*	2nd (3)	"learning support classroom"	Writing letter sounds & segmenting words into sounds	Multiple probe	Students' spelling words
Jitendra et al., 2004	*Journal of Learning Disabilities*	Year 1: 1st-3rd graders (7) Year 2: 2nd-3rd graders (5)	Small group	*Read Well*	Several multiple-probe-across-participants design	Spelling Measure: (Tangel & Blachman, 1992, 1995)
Nies et al., 2006	*Journal of Behavioral Education*	3rd (2)	"Pull-out"	Cover, Copy, Compare & Copy-only	Alternating treatment design	Sight words from Trophies Harcourt Spelling 4th Grade
Howard et al., 2008	*Teaching Exceptional Children Plus*	3rd (1), 4th (1), & 5th (1)	One-on-one	Mnemonic approach-acrostic, picture, & story (PESTS) (sight words)	Multiple probe across subjects & ABAB	Standardized spelling test, a developmental spelling test, & a researcher-developed instrument

Breach et al., 2016	*Journal on Educational Psychology*	4th (1)	Resource Room	Cover, Copy, Compare	Combination of multiple baseline & AB design	Classroom constructed spelling worksheet
Datchuk & Dembek, 2018	*Insights into Learning Disabilities*	4th (3)	Resource Room	Modified form of Cover, Copy, Compare & extended time for handwriting (SI and FBPC with adaptations for spelling and extended time)	A multiple baseline across small groups	Picture-word prompts & Sentence construction probes

Table 2
Spelling Interventions: Secondary

Author(s)/ Year	Journal	Grade (n)	Setting	Intervention	Design	Measures
Van Houten, R., & Van Houten, J. 1991 (Experiment 2)	*Journal of Learning Disabilities*	5th grade (2)	Resource Room	Recitation & transcription	Two multiple baselines across subjects	A list of the most frequently written words (Thomas, 1979)
Reid & Harris, 1993	*Exceptional Children*	9–12-year-olds (28)	Self-contained classroom	Spelling study procedure (SSP), followed by self-monitoring of performance (SMP) and self-monitoring of attention (SMA)	Randomized group design	Weekly spelling tests
MacArthur et al., 1996	*The Journal of Special Education*	Study 1: Grades 5-8 (55) Study 2: Grades 6-8 (27)	Study 1: self-contained classroom (elementary) & special education classroom (secondary) Study 2:	Study 1: Comparison of 10 Common Spell Checkers Study 2: Spell checkers	Study 1: Descriptive Study 2: Descriptive	Study 1: Narrative and expository compositions Study 2: TWS-3 & Thematic Maturity subtest of the TOWL-2
Oakland et al., 1998	*Journal of Learning Disabilities*	11-year-olds (48)	Reading classes at The University of Texas's Learning Abilities Center	The Dyslexia Training Program	Experiment (treatment and control)	Spelling sub- tests of the WRAT-R (WRAT-R Spell)

Morton et al., 1998	*Journal of Behavioral Education*	11–12-year-olds (5)	Self-contained classroom	Self-correct after each word or self-correct after attempting all 10 words	Alternating treatments design	Lists developed from *McDougal Little Spelling*
McNaughton et al., 1997	*Learning Disabilities Research & Practice*	10th grade (2) & 12th grade (1)	Not explicitly stated	InSPECT proofreading strategy	Multiple probe across subjects	Proofreading probes
Raskind & Higgins, 1999	*Annals of Dyslexia*	9-18-year-olds (39)	Computer instruction at an individual terminal; small group instruction and one-on-one assistance if needed	Speech recognition technology	Experimental group design	*Wide Range Achievement Test-3* (WRAT-3)
Burks, 2004	*Intervention in School and Clinic*	5th grade (3)	Small Group	Classwide Peer Tutoring	ABAB Design	"Weekly tests"
Alber et al., 2004	*Journal of Behavioral Education*	5th grade (6) – LD (4) & ADHD (2)	Resource Room	Comparative effects of self-correction after attempting each word and self-correction after attempting a list of 10 words	An alternating treatments design	McDougal Littell Spelling series
Higgins & Raskind, 2004	*Annals of Dyslexia*	8-18-year-olds (38)	Classroom	A computer Speech Recognition-based Program (SRBP) & a computer and text-based Automaticity Program (AP)	Experimental group design	*Wide Range Achievement Test-3* (WRAT-3)

Viel-Ruma et al., 2007	*Journal of Behavioral Education*	10th grade (2) & 12th grade (1)	Resource Room	Error self-correction	Alternating treatments design	*Grammar and Composition Handbook, High School* (2000)
Walker et al., 2007	*International Journal of Special Education*	9th grade (3)	Special Education Classroom	Direct Instruction writing program, *Expressive Writing*	A multiple probe design across participants	The number of correct word sequences written during the first three minutes of narrative writing opportunities & TOWL-3
Evmenova et al., 2010	*Learning Disabilities Research & Practice*	3rd-6th (6)	A major northeastern university	Word Prediction Software Programs (CoWriter, WordQ, and WriteAssist)	Changing conditions	Journal writing
Zielinski et al., 2012	*American Secondary Education*	9th grade (1), 10th grade (1), & 12th grade (1)	Resource Room	Cover, Copy, and Compare	Multiple baseline with a reversal	Vocabulary packets used in a current events class
Hochstetler et al., 2013	*Educational Research Quarterly*	8th grade males (3) - LD (2) & OHI (1)	Resource Room	Cover, Copy, and Compare	A multiple-baseline across word lists	"Most Frequently Used Words" list
Goodman et al., 2015	*Educational Research Quarterly*	3rd (1), 6th (2)	Resource Room	Cover, Copy, and Compare	A modified multiple baseline & ABAB reversal	Grade level spelling words

Aguirre et al., 2015	*The Analysis of Verbal Behavior*	17-18-year olds (3)	Boarding School	Instruction in a visual imagining strategy	A multiple-probe design across participants	American College Test (ACT®) preparation source ("ACT® prep words")
Niedo et al., 2016	*Learn Disabil (Pittsbg)*	5th-9th (33)	Not explicitly stated	Computerized instruction in translation	Descriptive	Composition tasks
Beers et al., 2018	*Learning Disabilities (Weston, Mass.)*	4th-9th (20)	Not explicitly stated	Computerized writing instruction	Pre-posttest experiment (within-participant)	*Word Scrambles of the Test of Orthographic Competence (TOC), TOC Homophone Choice* (ages 9 to 12,) or *Word Choice* (ages 13 to 16)*, & Wechsler Individual Achievement Test, 3rd Edition (WIAT III) Spelling*
Zannikos et al., 2018	*Journal of Behavioral Education*	5th grade (4)	Small Group	Cover, Copy, and Compare (CCC) & Taped Spelling Intervention (TSI)	An adapted alternating treatments design	AIMSweb fifth-grade word lists

Conversation Analysis of Shared Reading with Students who Have Significant Support Needs

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Abstract

Shared reading focuses on the interaction between an adult and one or more children as they experience a book together. While research has documented classroom shared reading practices among students with diverse characteristics, few have focused on students with significant support needs. Using a conversation-analytic approach, this study sought to describe the teacher strategies that scaffolded successful interactions during shared reading in two self-contained classrooms serving students with significant support needs. Instances of teachers maximizing student participation, promoting connections with the text, maximizing multiple turn interactions, and encouraging students to take the lead were analyzed. Subsequent conversation analysis revealed that a variety of strategies supported students with significant support needs in interactions during shared reading, such as asking open ended questions, commenting, repeating and expanding student comments, modeling text-to-self connections, and providing think time. The implications for applying such strategies during shared reading with students with significant support needs are discussed.

Keywords: secondary, intellectual disability, multiple disabilities, shared reading, communication, conversation analysis

Conversation Analysis of Shared Reading with Students who Have Significant Support Needs

Students with significant support needs (SSN) experience some of the greatest challenges with language and communication (Erickson & Geist, 2016; Towles-Reeves et al., 2012). Yet, in the United States, these students are primarily educated separately from their peers without communication disabilities in classrooms that often present few opportunities for engagement and interaction (Kurth et al., 2016; Morningstar et al., 2017). For students with SSN, shared reading is one literacy intervention that holds promise for increasing opportunities and improving participation in meaningful conversations about books (Erickson & Koppenhaver, 2020; Skotko et al., 2004). From a social interactionist perspective, the nature and quality of student participation is in large part dependent on how adults scaffold their support during these interactions (Vygotsky, 1978). Therefore, the purpose of this study was to conduct a microanalytic analysis of extratextual conversation during shared reading in order to identify strategies that teachers of students with SSN naturally used to scaffold successful interactions about the text.

Across U.S. public schools, more than 560,000 students (National Center for Education Statistics, 2022) have SSN and participate in alternate assessments based on alternate achievement standards. Students with a range of significant disabilities (e.g., autism, multiple disabilities, intellectual disability) participate in these alternate assessments because their team determines that their disabilities prevent them from achieving grade level academic standards, even with appropriate instruction and accommodations (Office of Special Education Programs, 2007). Among these are students with SSN who have "significant limitations both in intellectual functioning and adaptive behavior" (American Association of Intellectual and Developmental Disabilities, 2017, para. 1) with a combination of cognitive, motor, communication, and sensory impairments (Erickson & Geist, 2016; Towles-Reeves et al., 2012).

In the United States, approximately 80-90% of students with SSN are educated in separate classrooms or special schools (Erickson & Geist, 2016; Kleinert et al., 2015; Morningstar et al., 2017). Classroom observations of these settings report that they offer few opportunities for active engagement and interaction from early childhood (Tsai, 2016) through high school (Kurth et al., 2016; Ruppar, 2015). Teachers in these separate settings invite little communication and interaction, and students with SSN respond to only a small portion of the invitations they do receive (Causton-Theoharis et al., 2011; Pennington & Courtade, 2015). Multiple factors likely contribute to the dearth of engaging and successful discourse within classrooms serving students with SSN, including: complex motor, sensory, and intellectual profiles that preclude student use of speech (Erickson & Geist, 2016); lack of necessary opportunities and supports to develop language using augmentative and alternative communication (AAC; Erickson & Geist, 2016; Geist et al., 2020); and overlooking or misunderstanding unconventional forms of communication (e.g., idiosyncratic gestures, unintelligible vocalizations; Pufpaff, 2008).

Teacher-student interaction is further constrained by structured teaching practices (e.g., task analysis, errorless learning, systematic prompting) that dominate educational practice with students who have SSN in the United States (Brown et al., 2020; Towles-Reeves et al., 2009). Thus, highly controlled, teacher-directed engagement focused on promoting discrete skill mastery (e.g., Browder et al., 2008) displaces authentic, meaningful conversations that can support independent thinking, learning, and communicating (Bock & Erickson, 2015; Kleinert et al., 2009). The prescriptive nature of the initiation-response-feedback cycles associated with structured teaching approaches does not allow space for the authentic, spontaneous, dynamic, and unrehearsed nature of meaningful conversations built around student thoughts, ideas, and interests.

Most of the literature base in shared reading with students with SSN reflects this structured teaching pedagogy, with a focus on teaching students to provide correct responses to narrowly defined stimuli or questions (Browder et al., 2008; Fleury et al., 2014; Fleury & Schwartz, 2017; Hudson & Test, 2011; Mims et al., 2012; Ruppar et al., 2017). For example, these teacher-directed, structured approaches have effectively taught students with SSN to produce targeted responses (Browder et al., 2008), increase their time on task (e.g., Mucchetti, 2013), and increase their participation in response to a prompt (Fleury & Schwartz, 2017). Unfortunately, these approaches do not help students learn to initiate interactions or make the kinds of connections required to read or listen with increased comprehension in the future (Fleury & Schwartz, 2017; Kintsch & van Dijk, 1978; Morrison & Wlodarczyk, 2009). In other words, students with SSN

can learn to respond correctly to an adult's stimuli with repeated readings of a book (e.g., "Who loved his dog?"), but these interactions may not support students in building their own understandings about the books they are reading (e.g., "I love my dog too!").

Counter to the teacher-directed, structured approaches that dominate the literature base and classrooms of students with SSN, a Vygotskian (1978) approach to instruction emphasizes that language acquisition occurs within the context of social interactions of high-quality, adult-student engagement, as adults scaffold children's successful participation in increasingly more sophisticated ways. This social interactionist perspective is embedded into the shared reading literature for students without disabilities (DeTemple & Snow, 2003; Massey, 2013). Within approaches built upon this social interactionist perspective, the adult may initially need to scaffold a balanced exchange with the student, but the ultimate goal is to have the student lead the interaction (Ezell & Justice, 2005; Whitehurst et al., 1988). Given the extant literature base in teacher-directed, structured approaches for students with SSN (Hudson & Test, 2011), teachers of students with SSN may require guidance in how to best support student-led communication during shared reading interactions (Kaderavek & Rabidoux, 2004). This is especially important given the critical role of student-led communication in maximizing language and literacy learning outcomes (Zwiers et al., 2014).

Social-interactionist approaches offer an alternative means of teaching students with SSN to make important connections and initiate interactions during shared reading. They do so by offering more flexibility in how teachers engage students through strategies such as attributing meaning to communication behaviors, demonstrating examples of how to talk about the text, following student interests, and using questions or comments that extend beyond the text (Erickson & Koppenhaver, 2020). There is a small but growing literature base reflecting the use of this approach to shared reading with students who have SSN. Skotko et al. (2004) examined the impact of this approach to shared reading on communication outcomes for girls with Rett syndrome. The researchers encouraged parents to (a) acknowledge all communication attempts and attribute meaning to them, (b) use natural comments and questions rather than directives, (c) provide sufficient wait time, (d) ensure that the girls looked when demonstrating the use of communication symbols, and (e) make use of the speech-generating device and symbols provided through questions and comments. As a result, the girls exhibited increased labeling, commenting, and engagement during shared reading interactions. Sennott and Mason (2016) focused on language modeling and responding to student communication during shared storybook reading with a young boy with autism and reported an increase in turn-taking, use of speech, and use of a speech generating device. While there is still a great deal to learn about social-interactionist approaches to shared reading with students with SSN, approaches that emphasize connections, active engagement, and student-initiated interactions may promote better long-term outcomes than structured, teacher-based approaches.

The Context of the Current Study

Tar Heel Shared Reader[1] is a five-year project intended to create an implementation model to help teachers use shared reading with their students with SSN using a student-centered approach (http://sharedreader.org). The long-term goal is to create the products and resources that would assist teachers in navigating the interactive goals of shared reading such as maximizing student participation, making connections with the text, maximizing multiple turn interactions, and

encouraging students to take the lead. During the first development year in which this study took place, a primary goal of the project was to observe classroom shared reading interactions for the purpose of identifying naturally occurring teacher strategies that supported student-initiated communication and interaction. After providing a short professional development that contrasted teacher-directed and student-led approaches, it was of interest to see how teachers naturally (i.e., in the absence of training on specific strategies) engaged their students when asked to implement a student-led, social-interactionist approach, which we termed "student-centered". The data gathered from this study were used to inform the development of a series of five open-source, online professional development modules on a student-centered approach to shared reading (http://www.sharedreader.org/professional-development/) in self-directed and facilitated formats, as well as open-source, online resources (http://sharedreader.org) for parents, teachers, and coaches. For the purpose of this present study, we had one four-part research question: What teacher strategies or behaviors precede each of four successful interaction outcomes during shared reading with students with SSN: (a) maximizing student participation, (b) helping students make connections with the text, (c) maximizing multiple turn interactions, and (d) encouraging students to take the lead?

Method

Participants and Setting

The participants included one high school teacher, one middle school teacher, and 10 of their students with SSN whose parents or legal guardians provided consent for them to participate in the project. The female, high school teacher had six years of teaching experience exclusively in special education. She was certified in general elementary education and special education. The female, middle school teacher had 28 years of teaching experience with 19 years in special education. She was certified in early childhood (K-4), elementary education (K-6), and special education. Demographics regarding the student participants are provided in Table 1. Both self-contained classrooms were located in one rural, public school system. In the high school, 28% of the students qualified for free or reduced lunch and in the middle school, 49% of the students qualified for free or reduced lunch.

Table 1
Student Participant Demographics

Student	Age	Sex	IDEA Eligibility Category	Communication Modes	Highest Level of Expressive Communication
Classroom A					
# 1	18.1	M	Multiple Disabilities	AAC, Speech, Sign	Level 6 – Abstract Symbols
# 3	15.8	F	Other Health Impairment	AAC	Level 2 – Intentional Behaviors
# 6	15.1	M	ID-Moderate	AAC, Speech	Level 7 – Abstract Symbols
# 7	15.7	M	ID-Severe	Speech	Level 7 – Abstract Symbols
# 8	16.3	F	ID-Moderate	Speech	Level 7 – Abstract Symbols
Classroom B					
# 9	11.3	M	ID-Moderate	Speech	Level 7 – Abstract Symbols
# 10	12.8	F	Multiple Disabilities	Speech, Sign	Level 7 – Abstract Symbols

# 11	11.4	F	Multiple Disabilities	Speech	Level 7 – Abstract Symbols
# 12	13.4	M	ID-Moderate	AAC, Speech	Level 7 – Abstract Symbols
# 13	10.7	F	Multiple Disabilities	AAC, Speech	Level 3 – Unconventional Communication

Note. ID = Intellectual Disability; Highest Level of Expressive Communication indicates the highest level that was observed across all areas of the Communication Matrix (Rowland, 2004)

Research Design

This study used an inductive, video-based, microanalytic approach supported by verbatim transcripts of the videos. The data were analyzed using methods informed by the traditions of conversation analysis, where the goal is to analyze conversation in a particular context for the purpose of explaining how participants organize and manage turn sequences, by examining recurrent and unique incidents (Schegloff, 2007; Ten Have, 2007).

Measures

The Communication Matrix (Rowland, 2004) was used to build a communication profile for the students with SSN across four purposes of communication (i.e., refuse, obtain, engage in social interactions, provide or seek information) using structured observations of communication behaviors across seven levels, as reported in Table 1: (1) pre-intentional behaviors; (2) intentional behaviors; (3) unconventional communication; (4) conventional communication; (5) concrete symbols; (6) abstract symbols for specific referents; (7) language combining symbols.

Procedures

Following approval from the university Internal Review Board and the school district, a high school teacher and middle school teacher provided written consent to participate in the project. After teachers provided consent, consent forms were distributed to teaching assistants and the parents of students in their classrooms. Researchers completed structured observations of expressive communication skills using the Communication Matrix with students whose parents provided consent. Each teacher participated in a 30-minute one-on-one professional development session that provided an overview of a student-directed approach to shared reading. Minimal information on specific strategies was provided because the goal was to identify naturally occurring teacher behaviors or strategies that preceded successful student interactions based solely on introductory information about a student-directed approach to shared reading.

This study focused on four shared reading sessions that were video recorded, two in each classroom. In the high school classroom, Teacher A stood in the front next to an interactive whiteboard and students were seated in chairs or wheelchairs in a semi-circular fashion. In the middle school classroom, Teacher B was seated near the interactive whiteboard behind a semicircular table, with students seated in chairs or wheelchairs around the table. The four video-recorded sessions in the current study ranged in length from 6.1 to 13.7 minutes (M = 8.4). The teachers were encouraged to self-select books from Tar Heel Reader (http://tarheelreader.org), which is an open-source, accessible (i.e., accessible across platforms via switches, eye-gaze, direct selection with options to change color contrast, use text-to-speech), online library of more

than 75,000 texts for beginning readers of all ages. All of the books have one picture on a page and no more than three lines of text. Teacher A read *Being Nice at Dinner* (DLM, 2014) and *Exercise* (Charna, 2013), and Teacher B read *Movie Night* (CLDS, 2015) and *Growing My Sunflower* (Nick L., 2011).

Data Collection

The videos were transcribed verbatim by a graduate research assistant and then the accuracy of the transcripts was checked as the first two authors repeatedly reviewed each video and expanded upon the verbatim transcripts to create a detailed record of interactions. Next, the authors viewed and discussed the videos in collaborative data sessions to build detailed transcriptions of the four shared reading sessions. During these transcription sessions, two or more authors watched videos several times with reference to the transcripts, and then discussed the analytic observations through shared observation and analysis (Ten Have, 2007). This approach supports the validity and reliability of the conversation-analytic approach (Perakyla, 1997). The first two authors used consensus during these transcription sessions to identify incidences of interactional sequences that resulted in teachers successfully achieving one of four mutually exclusive shared reading interaction goals: (a) maximizing student participation (i.e., nonsymbolic and symbolic communication that did not represent making connections, a multiple turn interaction, or taking the lead), (b) helping students make their own connections with the text, (c) maximizing multiple turn interactions, and (d) supporting students to take the lead. The resulting data were comprised of 295 successful, fully transcribed interactional sequences (See Table 2).

Table 2
Frequency Counts of Teacher Strategies Preceding Successful Interaction Outcomes with Students

Interaction Outcome Teacher Strategy	Teacher A Reading 1 5 students	Teacher B Reading 1 4 students	Teacher A Reading 2 4 students	Teacher B Reading 2 5 students
Maximizing Student Participation				
Animated reading	3		6	1
Comment about book	3	15	2	
Open-ended question		14	2	1
Attribute meaning	1	1	1	1
Pause and expectant look	1	1	2	
Repetition as question	2	14	2	
Yes/No question		13	21	2
Total	10	58	36	5
Helping Students Make Connections with the Text				
Model self-to-text connection		12	1	5
Contingent question		5		
Total	0	17	1	5
Maximizing Multiple Conversational Turns				
Model text-to-self connection		1		
Surprise Token	5	1		1
Repetition and addition	4	3	2	8
Attribute meaning		1		

Expansion	3	17	17	4
Extension		3	1	
Repetition as question		7		2
Pause	3		1	
Yes/No question		5		2
Comment about book		11		14
Closed question				6
Repetition				9
Total	15	48	21	46
Encouraging Students to Take the Lead				
Surprise	2	4	2	
Pause	8		3	
Repetition as question	2		6	
Comment about book				1
Repetition of text				2
Expansion			1	
Total	12	4	14	3
Missed Opportunities for Interaction				
*No Contingent Response	13	3	9	2
Total	13	3	9	2

Data Analysis

Through repeated analysis of these sequences, conversation-analytic conventions were applied to code the characteristics of these interactions. The data were grouped according to the frequency of each type of teacher action that preceded a successful interaction sequence. Consensus building was used to discuss and resolve uncertain cases. Conversational excerpts were prepared using traditional conversation analysis methods (Jefferson, 2004) and AAC transcription conventions (Von Tetzchner & Basil, 2011). See Appendix A for coding conventions. Given the challenges associated with documenting pre-symbolic communication (Wilkinson & Kitzinger, 2017), one consented student in each classroom who did not use conventional non-symbolic or symbolic communication was excluded from analysis. All communication turns by, to, or in response to two nonconsenting students ($n = 27$, $n = 5$ respectively) in Teacher A's classroom were removed from the data set and further analysis.

Results

Maximizing Student Participation

Asking questions was one of the primary means by which Teacher A (28 times) and Teacher B (26 times) invited participation. Response to yes/no and closed questions elicited a 1- to 2-word response from students 80-84% of the time, and open-ended questions elicited 3- to 6-word responses 50% of the time. During the session of *Movie Night*, Teacher B posed an open-ended, inferential question, "So how do you know it's daytime?". Student #11 correctly answered the question while pointing to the picture, "Because the sun is out." Then Student #10 also pointed to the picture on the screen. The teacher acknowledged the non-symbolic communication by producing an affirmative token, repeating the gesture, and attributing meaning to the student #10's communication, "Uh-huh. You see over there the sun is out."

Demonstrating comments was another teacher behavior that preceded student participation. During the session of *Being Nice at Dinner*, after Teacher A read the text, Student #7 responded with interest and clapped his hands. The clapping signaled engagement, but this nonsymbolic communication appeared semantically incongruent with the text. Next, Teacher A demonstrated the use of a 2-word verbal comment with familiar vocabulary (line 71) and Student #7 responded with a verbal symbolic repetition plus addition (line 72). Thus, Teacher A's model supported the student in shifting from nonsymbolic to symbolic participation and also scaffolded the student's production of a semantically congruent expansion using the modeled syntactic framework.

69. Teacher: *Helen threw food and dishes*. ((reading))
70. Student #7: ((claps with laughter))
71: Teacher: *Do not*.
72: Student #7: *Do not* [*plate*].

Helping Students Make Connections with the Text

Teacher B helped students learn to make connections by modeling her own text-to-self connections (12 when reading *Movie Night*, and 5 when reading *Growing My Sunflower*). Prior to the following extract from *Movie Night*, Student #11 read, "You can watch a movie with your dog". Teacher B made a text-to-self association about her own dog (line 186), and student #11 used similar syntax to share similar experiences of watching movies with her cat (line 189). After Teacher B asked student #11 a yes/no contingent question (line 190), Student #12 joined the dialogue, making his own text-to-self connection regarding his puppy (line 192).

186. Teacher: *Man*, [*I watch movies with my dog*].
187. Assistant: *Do you watch movies with your dog*? ((talking with student #10))
188. Student #10: *Yeah*! ((leans toward TA 2))
189. Student #11: *I watch movies with my cats.* [*cat*].
190. Teacher: [*Do you watch*] *movies with your cat*?
191. Student #11: *Yah*.
192. Student #12: *My puhpuh my puhpuh* ((moves fingers on table like typing or playing piano))
193. Teacher: *Does your puppy watch movies*?
194. Student #12: *Day* {verbal approximation of yes}. ((smiles))

While less frequent, teachers also supported students in elaborating upon personal connections to the text by asking contingent questions (six times). In the following extract from *Exercise*, Student #4 made a text-to-self connection by identifying himself as a soccer player (line 166). Teacher A's contingent question at line 167 then elicited an elaborated multi-word comment from the student (line 168). Teacher A's open-ended question then extended the text-to-self connection at line 169, and two students made successive contributions (lines 170 and 171). Teacher A then repeated the comment made by Student #6 and Student #1 joined in, resulting in a multiparty exchange on a student-initiated topic.

165. Teacher: *People can play soccer with friends to get exercise*. ((reading text))
166. Student #7: *Me*. ((raises hands))

167. Teacher: *You*?
168. Student #7: *We frie:nd*. (Name of student) *and* (name of student). ((points to left*)*)
169. Teacher: *Ok.* [*What are you guys gonna do?*]
170. Student #7: "*FRIEND*." [*Friends*.]
171. Student #6: *"Soccer".*
172. Student #7: "*BASKETBALL*"
173. Teacher: *Soccer*!
174. Student #1: "*Unintelligible"*. "*Play*".

Maximizing Multiple Turn Interactions

There were 149 instances of multiple turn interactions found in the transcripts. Repetitions (i.e., exact repetition of student utterance; nine times), repetitions with additions (i.e., repetition that adds information; 17 times), and expansions (i.e., repetition that is grammatically correct; 41 times) were used frequently by both teachers to support multiple turn interactions. For example, in the following extract from *Being Nice at Dinner*, Student #6 initiated a topic by labeling an item in the picture (line 77). Teacher A repeated the student's utterance, and followed it with an addition at line 78. This response brought Student #7 and Student #1 into the conversation as they repeated the previous label and each produced a new label (lines 79 and 80). Teacher A acknowledged the latter contribution with an expansion that provided a more adult-like model of the word (line 81). These teacher repetitions of student contributions extended the dialogue over additional conversational turns, as multiple students enthusiastically contributed by labelling the picture, naming semantically related items, and commenting about the food.

77. Student #6: [Chicken nuggets. ((*points to screen*.))]
78. Teacher: Chicken nuggets. You see those chicken nuggets.
79. Student #7: Chicken nuggets.
80. Student #1: Let…((*points to screen*))
81. Teacher: Lettuce.
82. NP: [(Non-participant statement)]
83. Student #7: [Pi:ckles.]
84. Student #6: French fries.
85. Teacher: Pickles. [I don't know.] I don't see pickles.

Although it only happened once, when Teacher B modeled a text-to-self connection, it led to the longest sequence of 14 conversational exchanges. In the following extract from *Movie Night*, Teacher B made a text-to-self connection (line 392). This led Student #11 to extend the personal connection and resulted in seven authentic questions, three of which are included in the extract that follows (lines 393, 395, 398). Sometimes Student #11's questions related to information that was previously known about Teacher B as it applied to the book. At other times, Student #11 applied new information to extend the conversation (line 395). In making text-to-self connections, Teacher B provided a catalyst for Student #11 to engage in a multi-turn exchange that included appropriate questions based on the content of the book and curiosity about how they connected to their teacher.

392. Teacher: …*Like this weeke:nd, I went to the beach with my sister and my mama*.

393. Student #11: *Did you take Muffins*?
394. Teacher: *I took Muffins. And I got to sit and watch* [*a movie with my sister*].
395. Student #11: *Does your* [*sister have-does your sister have*] *a pet*?
396. Teacher: *No. Just me. And I got to sit and watch a movie with my sister, and that was more fun than watchin' it by myself*.
397. Assistant: ((pats, then holds and rubs right hand of Student #2, who smiles*))*
398. Student #11: *Does Muffins watch movies with you*?
399. Teacher: *She does. She likes to watch movies with us too*.

While attributing meaning was rarely used by teachers to support student communication efforts, it did facilitate one multiple turn interaction for a student with complex communication needs. In *Movie Night,* the class was deciding whether a picture was showing a boy watching a movie in an airport. Student #12 touched the teacher's sleeve with his left hand, while saying, "Nay, nay. Nay nay". Then he lifted his shirt in front of his face and made a kissing sound with a big smile, followed by a verbal comment "maybe!" The teacher contingently responded to the student's multimodal contribution by attributing meaning to the entire communication effort, "Yeah, you'd kiss 'em." And Student #12 continued by saying, "No!" while shaking his head, followed by "Maybe?" with a smile. Attributing meaning honored the student's communication efforts, modeled a more sophisticated linguistic turn, and supported the student's continued participation in a multiple turn interaction, even if the connection to the meaning of the story or group conversation was unclear.

Encouraging Students to Take the Lead

Finally, teachers encouraged students to take the lead in the interaction 34 times, with Teacher A accomplishing this most frequently (26 times). Pausing and providing think time not only encouraged students to participate or take turns in multiple turn interactions, but also most frequently preceded students taking the lead. In the following extract from *Growing My Sunflower*, Teacher B turned the page and described the picture of a sunflower seedling. The picture elicited a surprise token from Student #10 at line 131. During the teacher's 3.5-second pause, Student #12 used multimodal communication to signal he needed more time to take a turn (line 132). After Teacher B signaled that Student #12 could hold the floor (line 133), Student #12 used his speech-generating device to label the picture at line 134. Teacher B produced a linguistic expansion and then an addition of semantically related information (line 135).

130. Teacher: *A seedling. It's like a baby. It starts to* [*grow like a little baby*.]
131. Student #10: [*hhh*((inhalatory))] *Grow*! ((claps hands))
(3.0)
132. Student #12: *Yuh nee ta nee*? ((raises index pointer finger as if to say 'wait a moment'))
133. Teacher: *Ok*.
134. Student #12: "*Sunflower*".
135. Teacher: *There's a sunflower! It will be a BI:G* ((*makes a big arm circle*)) sunflower.

Displays of surprise also frequently preceded students taking the lead in the interaction, as well as participating in multiple turns. The expressions of surprise provided valuable feedback about the unexpectedness of the students' contributions, while validating the conversational turn and providing authentically generated encouragement for the discourse to continue. In the following

extract from *Being Nice at Dinner*, Student #7 provided a topical lead about the action in the text, with supportive prosodic contours and gestures at line 143. Teacher A coupled a response token of surprise with a rhetorical question that affirmed receipt of the message, expanded on the students' linguistic utterance, and encouraged the student to continue (line 145). This reaction led the student to further elaborate with onomatopoeia and nonverbal sound effects at line 146. Teacher A recycled her surprise token and added a semantic extension (line 147) that prompted another student to join the exchange with an agreement token (line 148).

142. Teacher: *Helen threw her bo::wl:*!((reads))
143. Student #7: [*Broke!* ((motions with hands to emphasize statement))]
144. Student #1: [*Bowl*.]
145. Teacher: *Oh my goodness*! *You think it would break*?
146. Student #7: *Yah! Pow*! ((claps hands for emphasis))
147. Teacher: *Oh my goodness! Just like that*?
148. Student #6: *Yeah*!

Missed Opportunities

While the primary purpose of this study was to identify teacher behaviors that supported successful interaction aligned with the goals of shared reading, there were some patterns of missed opportunities for engagement that appeared throughout the transcripts. Most of them occurred in Teacher A's classroom. She missed 22 opportunities to provide contingent responses to student communication efforts, particularly when students used a speech-generating device. In the following extract from *Exercise*, Student #6 was the first to make a comment using his device after Teacher A read (line 107). He then repeated his original comment with his speech-generating device at line 109 without any contingent response. Teacher A provided a contingent response to the spoken contribution of Student #7 (line 110) but offered no response to Student #6. Student #6 interjected his comment with his speech-generating device two more times (lines 112 and 115) as the verbal exchange continued between Teacher A and Student #7 (lines 110, 111, 113 and 114). After Student #6 made a fourth attempt (line 115), Teacher A finally acknowledged his comment by repeating it (line 117).

106. Teacher: *People can* [*swim*] *at the gym to get exerci:se*. ((reading))
107. Student #6: ["*Swimming*"].
108. Student #7: [*I been*] *there 'fore*.
109. Student #6: ["*Swimming*"].
110. Teacher: *You've been there*?
111. Student #7: *Yep. My* [*mama papa*].
112. Student #6: ["*Swimming*"].
113. Teacher: Your mama and papa?
114. Student #7: [Yep].
115. Student #6: ["*Swimming*"].
116. Student #8: ((stands to tap the icon to turn the page on whiteboard, then returns to seat))
117. Teacher: *Swimming*?

Discussion

Shared reading is an early language and literacy activity that focuses on interaction and engagement (Ezell & Justice, 2005), which means that student participation is critical. Because communication is challenging for students with SSN, eliciting participation can be difficult for teachers. Across the 4 shared reading sessions included in this study, there were 110 instances of teachers eliciting participation. It is not surprising that nearly half of the time student participation was preceded by a familiar strategy, the use of questions. While questions did facilitate participation, the use of yes/no and closed questions typically resulted in a 1–2-word response that simply answered the teacher's query, ending the interaction.

In contrast, when teachers asked open-ended questions or used comments after reading a page, they elicited student participation and prompted students to use more words to respond or add information beyond the teacher's initial question or comment. Commenting is known to support successful interactions and language development during shared reading (Barnes et al., 2017; Whitehurst et al., 1988). Commenting can focus students' attention on aspects of the text, pictures, real-life connections, and print that help them notice, understand, and respond in more meaningful ways (Justice et al., 2009). Teacher comments also served to elicit multiple turn interactions. Teachers of students with SSN may benefit from training on providing a wide range of comments, with a particular focus on increasing the value of commenting by offering comments in response to student initiations and interests (Bellon & Ogletree, 2000). In addition, teacher training should also emphasize demonstrating the use of key graphic symbols for demonstrating comments with students who use AAC, including speech generating devices. This strategy, aided language input, can support receptive understanding and expressive use of graphic symbols in context (O'Neill et al., 2018; Sennott et al., 2016).

Multi-turn student interaction was often elicited when teachers repeated and expanded on student responses. This strategy acknowledged the student's contribution and also provided a model for students of either a clearer or slightly more complete message (Clarke et al., 2017). Repetition and expansion may have also elicited multi-turn student exchanges by supporting comprehension as all students had one more opportunity to hear a student message and to hear it in a more-clear or complete version. Encouraging teachers to repeat and clarify or expand student messages by adding a word or two may support extended interactions with the teacher and/or peers.

The least frequently occurring interaction outcome was the students' use of text-to-self connections. A student's ability to make connections using a combination of prior knowledge, language-based experience, and the text is critical for text comprehension (Duke et al., 2011), and it also increases their enthusiasm for talking about text (Zigo, 2001). While teachers modeled personal text-to-self connections, there was little evidence of teachers assisting students in making meaning from the text by helping them connect the book's content with information, ideas, or experiences that were familiar or known to the students (Morrison & Wlodarczyk, 2009). Teachers may benefit from learning how to preplan comments or open-ended questions that explicitly make connections between the text and student knowledge and experiences, as well as text-to-text or text-to-world connections.

There were also relatively few instances of students taking the lead during the interaction, which is the ultimate goal of shared reading (Ezell & Justice, 2005; Whitehurst et al., 1988). It is important to note that teacher pauses of at least three seconds most frequently supported this outcome. A wait-time of 3 seconds has been advocated in typical classrooms (Tobin & Capie, 1983) since Rowe (1972) first documented that "wait-time" rarely lasted more than 1.5 seconds, yet resulted in increased elaboration and accuracy after 3 seconds. Yet, many students with SSN may require 15-30 seconds or more of think time in order to process an adult's comment, think about it, and coordinate a reply or a comment of their own (Koppenhaver et al., 2001). Therefore, teachers of students with SSN may require supports in training, self-reflection, and coaching to ensure that the length of wait time matches the needs of their students.

One critical observation across all four shared reading sessions was the teachers' reduced responsiveness to student communication efforts, particularly by those who did not use speech to communicate. The overlooking or misunderstanding of symbolic and non-symbolic communication is reported as one of many classroom participation barriers for students who use AAC (Pufpaff, 2008). In the present study, it appeared the teachers simply missed comments made by students using speech-generating devices, and it took multiple attempts before those students' communication efforts were recognized. This decreased responsiveness to non-speech modalities may be related to a lack of knowledge and skills (Beukelman & Mirenda, 2013) or to self-reported beliefs that there is little teachers can do to support communication outcomes (Zascavage & Keefe, 2004).

Limitations

While we acknowledge that caution must be used in interpreting these results due to the small sample size, we believe that the in-depth analysis provides a valuable contribution to the dearth of literature about teacher behaviors that promote interaction with students with SSN during shared reading using a social interactionist approach. While this study only includes students who are being educated in separate settings, it is reflective of this population, as more than 90% of students with SSN in the United States are educated in separate classrooms or schools (Erickson & Geist, 2016; Morningstar et al., 2017). As we work to advocate for more access to inclusive settings with students who have SSN, this study provides evidence that students with SSN benefit from the types of early literacy instruction and engagement strategies encountered by their peers in general education settings (Erickson et al., 2009).

Conclusion

Shared reading is a powerful intervention for supporting interaction with students who have SSN. The goal of the study was to identify specific teacher behaviors to inform the ongoing development of an implementation model. The results suggest that those strategies that benefit students without disabilities, such as commenting, providing think time, modeling text-to-self connections, and expanding student utterances, also benefit students who have SSN.

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Appendix A

Conversation Analysis Transcription Conventions with Modality Modifications

Convention	Description
[ ]	Beginning and ending of overlapping speech.
↑↓	More significant pitch movement than in the typical rhythms of speech or in the representation of stops, commas, and questions.
→	Features that are relevant to the current analysis.
Underlining	Emphasis within individual words.
CAPITALS	Louder in volume than typically observed in the rhythms of speech that include emphasis.
°°	Significantly quieter than the normal rhythms of speech.
*	Squeaky in delivery.
(0.4)	Numbers in round brackets represent pauses that are measured in seconds.
(.)	A stop in round brackets represents a micropause that is too short to measure.
((*italics*))	Italic font in brackets indicates comments from the transcriber about features of interest in context or delivery.
::	Colons in the middle of words indicate elongation of the prior sound. The greater the number of colons, the greater the elongation.
hhh	Aspiration. The greater the number of h's, the greater aspiration.
.hhh	Inspiration. The greater the number of h's, the greater the inspiration.
Well,	A 'continuation' marker indicating that the speaker has not finished, marked by a fall-rise or weakly rising intonation.
What?	Questioning intonation, irrespective of grammar.
Yeah.	Falling, stopping intonation irrespective of grammar. They are not necessarily followed by a pause.
bu-u	A cut-off of the preceding sound.
><	Beginning and ending positions of speech that is speeded up.
<>	Beginning and ending positions of speech that is slowed down.
done.=we can	Talk is successive and without an interval. It can occur between one or more speakers.
Natural speech	Naturally spoken elements.
"*Synthesized speech"*	Elements generated by speech-generating device.
"*MANUAL SIGN*"	Elements produced with manual signs.

Note. Based on conversation analysis transcription conventions (Jefferson, 2004) and AAC transcription conventions (Von Tetzchner & Basil, 2011)

Appendix B

Shared Reading Module Learning Objectives, and Key Ideas

Learning Objectives	Time Ordered Agenda	Key Ideas
1. Define the goal of shared reading	5 minutes: Researcher presented overview of goal of shared reading and characteristics of students who could benefit 5 minutes: Participants completed activity focused on current literacy behaviors of each student to identify those who could benefit from shared reading (e.g., not yet interested in books, not yet able to follow text vs. reading independently with comprehension)	• Shared reading focuses on the interaction during book reading
2. Identify the characteristics of teacher-directed and student-directed approaches	15 minutes: Reacher contrasted teacher-directed and student-directed approaches to shared reading.	• Teacher-directed approaches embed expectations of students remembering content with the goal of having them answer questions with specific answers. • Student-directed approaches embed expectations of teachers responding to student communication acts with attention to things that attract student interest in the book. The goal is to maximize student initiation and interaction. • Student-directed shared reading strategies include encouraging engagement and interaction, providing books that may be of interest to students, following the student's lead, drawing attention to the print, and modelling and supporting communication

Teachers' Perceptions of School Behavior Support Systems: A Case Study

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Abstract

Teachers at a public middle school were given a questionnaire assessing the supports for student behavior and emotional needs in their school and district. Results show that teachers at this middle school perceive themselves as highly effective in forming individual relationships with students. Areas of growth include more clearly communicating and consistently implementing a Response to Intervention (RtI) process for behaviors, clarifying expectations of student behavior for both staff and students, and providing staff with more proactive professional development related to working with students with Emotional and Behavior Disorders (EBD). Relationship- and community-building RtI supports (Jones et al., 2004; Morrissey et al., 2010) fit well into a schoolwide Positive Behavior Interventions and Supports (PBIS) program (Fairbanks et al., 2008). One teacher is a single entity within the context of an entire system, they can be an advocate for change within the building and continue to support students' social, emotional, and behavioral learning.

Keywords: behavior, EBD, ED, emotional, middle school, PBIS, RtI, social skills

Teachers' Perceptions of School Behavior Support Systems: A Case Study

Schools have an enormous responsibility to meet the academic, social, emotional, and behavioral needs of our students. Secondary schools in particular need to help students navigate their emotions and behaviors in a tumultuous world: "Adolescents face enormous developmental challenges ... At no time in the country's history have young people been confronted simultaneously by such a wide array of positive and negative influences and opportunities" (Laser & Nicotera, 2011, p. xiii). With between 17 and 22% of adolescents facing developmental or emotional problems that affect their behaviors (Shechtman, 2014), schools are sure to encounter behavioral, social, and emotional challenges with their students. This raises the question as to whether schools have the resources necessary to support these types of needs for their students, staff, and families. The following study was conducted to assess the behavioral supports of one local middle school.

Method

The school studied is a middle school in a K-12 public school district. Questionnaires of fifteen Likert-scale questions were distributed to teachers in order to assess the supports of the school and district for students with emotional and behavioral needs and their families.

Participant School Context

The K-12 school district studied is in a suburban/urban area just outside a mid-sized city in upstate New York. It has one building at each of four levels: Primary (half-day Kindergarten

through 2nd grade), Elementary (3rd-5th grades), Middle (6th-8th grades), and High (9th-12th grades). There is also a Central Administration building, which houses the Preschool and some BOCES (Boards of Cooperative Educational Services) and special education classrooms. As of 2017, there were 3,583 students enrolled in the district. Fifteen percent of students are eligible for free or reduced lunch. Thirteen percent of students in the district are classified as students with disabilities. While this includes students with IEPs (Individualized Education Plans), it does not include students who receive accommodations through 504 plans. This small to moderate sized school district has a significant minority population: 11% Asian or Native Hawaiian/Pacific Islander, 7% Black/African American, 6% Multiracial, 5% Hispanic/Latino, and less than 1% American Indian/Alaska Native (NYSED, 2018). Three percent of students in the district are English Language Learners. Forty-four percent of families in the district rent housing rather than own homes (US Census Bureau, 2010). There are 327 teachers in the district.

At the middle school during the 2016-2017 school year, there were 881 students (6th-8th grades). Demographics of the middle school student population are similar to that of the district population. There are 80 teachers at the middle school, including 13 special education teachers. There are four school counselors, three building administrators, and one school psychologist.

Materials

The Adolescent School Assessment instrument was designed by the adolescent inclusive education cohort in a graduate course at a local college. The questionnaire (see Appendix A) contains fifteen Likert scale questions. The assessment tool evaluates several levels of support within the context of providing supports for students with behavioral and emotional needs: System/District Level, Building Level, Classroom Level, and School to Home. These sections are not labeled or separated in the questionnaire in order to limit bias since participants would be surveyed on their opinion of the middle school at all levels of support. Questions reflect the *Key Components in an Effective Program for Students with EBD* [Emotional and Behavior Disorders] (Jones et al., 2004).

Procedures

A blind email was sent to all of the teachers in the middle school (see Appendix B) with a digital copy of the questionnaire (see Appendix A), asking them to print and return completed surveys to the researcher's mailbox or email them digitally completed forms. Hard copies of the questionnaire and email text were also placed in teachers' mailboxes. Twenty-five hard copies of completed teacher surveys were received, some of which were hand-delivered to the researcher and some of which were placed anonymously in their mailbox. As soon as completed questionnaires were received, they were mixed into a large envelope. Therefore, while some teachers who completed the survey were known, it was unknown which responses belonged to which teacher. Individual responses were still anonymous.

Questionnaires were given out on a Thursday morning. Responses were accepted until two weeks later, also a Thursday, at the close of the school day.

Results

In total, there were 25 teacher responses to the survey. Results for each survey are based on a raw score out of 60 points and converted to a percentage. The maximum possible points for each Likert scale was 4; the minimum was 1. If participants selected "Not Applicable," wrote "I don't know," or left a question blank, that question was dropped from the raw score and the total number of possible points reduced by 4. Teachers scored the school at 67.4%. See Figure 1 for full results of the questionnaire, by question.

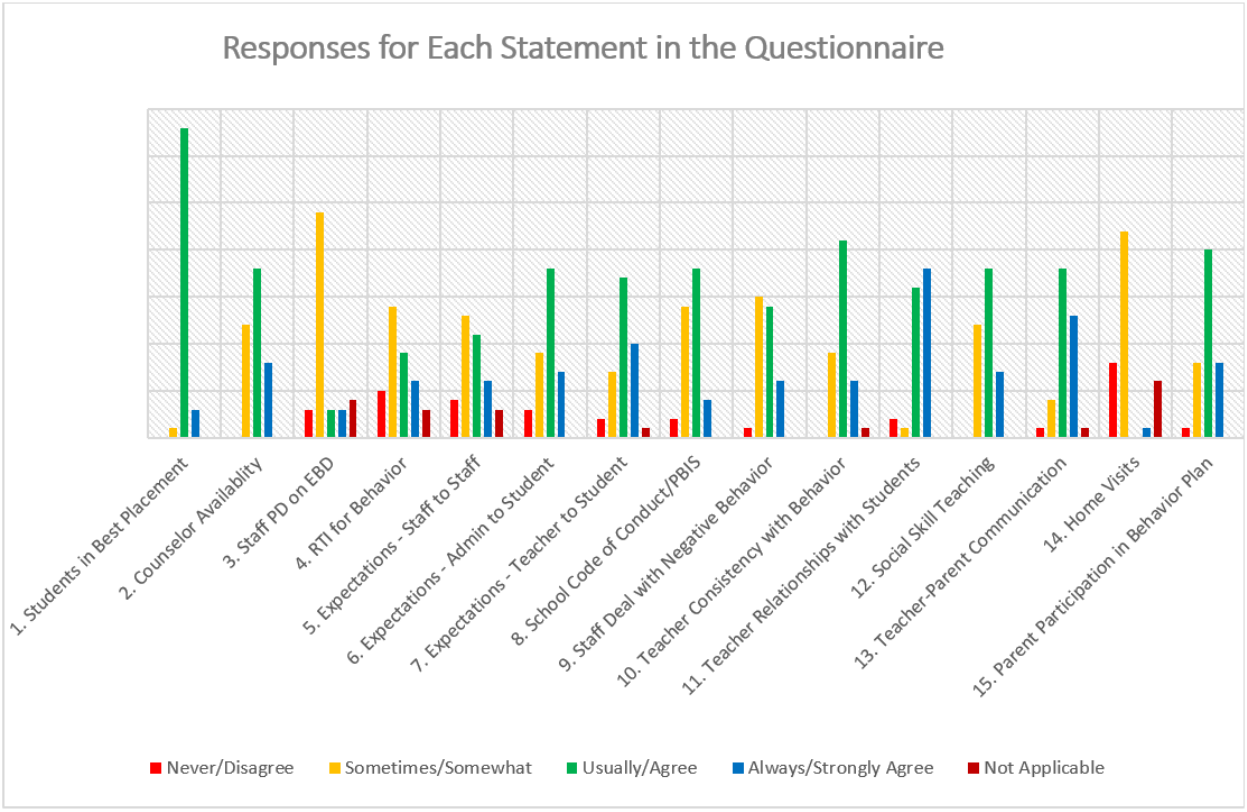

Figure 1
Responses to Questionnaire Statements

Discussion

Results demonstrated some areas the middle school excels in according to all participants' opinions. The study also revealed some areas in need of improvement and clearer communication. Though there were some limitations to the study, the results are still valuable for further implications.

Strengths

One clear strength at this school is the relationships teachers develop with individual students. When asked to respond to the statement that teachers attempt to build relationships with students, 91.9% of participants selected "usually" or "always." Teacher communication with parents was

also a strength. Eighty-nine percent of participants said students are "usually" placed in a learning environment best for their behavior and academic needs. Best and appropriate student placement is a relative strength for the school because only one participant responded "sometimes" and no participants selected "never." However, it is concerning that almost all of the participants thought students were "usually" placed in the best learning environment rather than "always" placed there. Ideally, all students should be appropriately placed in the environment that is a best fit for their behavior and academic needs.

Considerations for Improvement

This survey revealed some insights about the school and district's Response to Intervention (RtI) system (Question 4). Some participants wrote "RtI" next to this question and strongly agreed, but others disagreed or even circled "Not Applicable." This indicates that while some teachers are very familiar with the district's process for referring students to more supports and special education services, others are not even aware it exists. The RtI system needs to be streamlined and communicated to teams of teachers in a consistent manner so all students have an equal opportunity to be evaluated for further services if needed. There were a large number of participants stating they "Somewhat" agreed that schoolwide expectations are reviewed as a staff (Question 5). This, along with results from Question 8 about the lack of clarity of a school code of conduct, indicate that staff are unsure about school behavioral expectations. Recommendations for this middle school would include developing a clear and consistent schoolwide Positive Behavior Interventions and Supports (PBIS) system (Fairbanks et al., 2008; James et al., 2019; Kittelman et al., 2019; Morrisey et al., 2010).

Teacher and staff professional development in working with students with emotional and behavioral needs is also a weakness (Question 3). Sixty-five percent of participants said that staff and teachers receive this training only "as needed." Two of these respondents also wrote "in graduate school" next to this question, implying that training for supporting student behavior was the responsibility of the teacher education program rather than that of the school district. Unfortunately, "teacher education in the EBD field does not appear to have caught up with the demands for professional skills characterizing this field" (Jones et al., 2004, p. 14). Teachers and staff may be coming into the school district inadequately prepared to support student behavioral and emotional needs, therefore needing professional development from the district. However, this survey indicates that this middle school and district are relying on already-trained professionals in serving students with behavioral and emotional needs rather than providing ongoing professional development. This could be because students diagnosed with Emotional Disturbance (ED) are placed in a specific program and most professionals believe that only the case manager of students with ED needs to be trained. However, the number of students requiring emotional and behavioral support is increasing, and many of these students work with staff in inclusive settings, rather than just with their case manager in restrictive settings. In addition, training "as needed" indicates that not only are an insufficient number of staff being trained in supporting student behavior, but also that training is reactive rather than proactive. Training for working with students with emotional and behavioral needs should be available and required regularly for all staff and teachers in the school.

Limitations

Population is a limitation of this study, since it features only teacher perspectives. Administrator, staff, parent, and student surveys or interviews should be considered for further research. Also, the questionnaire itself had limitations in the use of the "Not Applicable" score. Some participants likely selected "Not Applicable" if they didn't know about the support in the district. If this was the case, the particular support needs to be better communicated to school personnel by the district. However, the percentage scores did not reflect a lowered raw score from these questions since they were eliminated altogether. Also, this is a case study, so it only reflects the perceptions of one school during one school year.

Conclusions

Recommendations for this middle school reflect both capitalizing on strengths and growing in areas of weakness. Staff and teachers should continue to invest in strong individual relationships with students, which can positively affect students' emotions (Goetz et al., 2021) and behavior (Lei et al., 2016; Roorda & Koomen, 2020; Van Bergen et al., 2020). The building and district can analyze and more clearly communicate the RtI process for students with behavior needs. A PBIS program should also be considered to clarify behavior expectations across the school for both students and especially staff (Petrasek et al., 2021; Reinke et al., 2012). Attention must be paid to the racial disparities in school disciplinary procedures such as suspensions, and efforts made to proactively support students (Artiles et al., 2010; U.S. Government Accountability Office, 2018; Welsh & Little, 2018). Finally, consistent professional development should be offered related to working with students with emotional needs and challenging behaviors.

Relevance to Literature

The clearest strength at this school is the intentionality and success of teachers to build relationships with individual students. Relationships can prevent many problem behaviors from occurring, but they also are a strong foundation for creating and implementing effective and person-centered behavior plans for students with challenging behaviors. One model of solving problem behaviors, *Collaborative and Proactive Solutions*, requires a child to feel that their needs and concerns are heard (Greene, 2014). A child will be far more willing to share their concerns, work with an adult to compromise, and change their behavior when they trust that the adult cares about them as a person. The researcher would encourage the teachers at this middle school and other schools to continue holding student-teacher relationships as a valued piece of their school's culture.

The recommendation for implementing PBIS at this middle school could provide clarity on many student behavior expectations. PBIS systems must be reviewed for fidelity and effectiveness in their implementation (Eiraldi et al., 2019; Elrod et al., 2021). Morrissey et al. (2010) describe a PBIS matrix that includes "Problem" behaviors and what to "Teach Instead" for various categories, such as being respectful and being academically engaged, across settings of the classroom, community, and in assemblies (p. 29). These specific, teachable behaviors show staff and students what the expectation is for each desired behavior.

Fairbanks et al. (2008) explain that tiered supports should be used for all students according to behavioral need before moving to a more intensive intervention:

> Unless student behavior is highly severe and ongoing (e.g., regular property destruction or physical aggression), implement primary and secondary tier interventions before developing tertiary tier supports. Evaluate the accuracy with which primary and secondary tier interventions are implemented and consider the impact of the interventions (p. 48).

Tiered supports for behavior as these authors describe them within the context of PBIS mirror the academic RtI process, and require data collection at the first and second tiers before moving a student to third-tier supports (Estrapala et al, 2020; Nese et al., 2021). This middle school needs a streamlined data collection and referral procedure for the RtI process, but teachers may also need resources for primary and secondary behavior supports in the classroom. Jones et al. (2004) describe primary and secondary prevention supports for student behavior such as creating shared behavior norms, establishing clear routines, improving teacher-student relationships, and providing small-group instruction in behavior management. Many of these types of preventative interventions require collaboration with other staff members, but these universal levels of supports should be available in all classrooms.

Applications and Reflections

Looking at this middle school through the teachers created an interesting and objective picture. While practitioners may hear from their colleagues often about both the social supports they are succeeding with in their classrooms and their perceived failings of their own administrators and school supports, they may not often hear teacher perspectives on the school as a whole. While teachers cannot control all of the system and building level supports in place, they can help students and their parents understand how these current supports work. Teachers are one part within this system, and even though they are responsible for the supports in their own classrooms, each student they encounter will be part of a larger system and many classrooms as well. District administrators, stakeholders, Boards, and researchers need to continue to listen to the valuable input of teachers on what is going on in their schools.

While teachers are just one piece of the school system puzzle, they can advocate for change in their own school buildings. For example, the discrepancy in understanding of RtI noted in this study is also evident when analyzing the number of students referred to special education and the RtI committee for behavioral needs at this middle school. Teachers and school staff should have ongoing training and feedback about the RtI systems and their implementation (Castillo et al., 2016; Duong et al., 2019). Some teams of teachers who are very familiar with the district's RtI process collect data on students and implement Tier 1 and 2 supports, so they can quickly and easily refer students for more supports when needed. Other teams are not familiar with the Tier 1 and 2 supports or do not keep data on student need, so these teams are not able to refer students to RtI when students appear to be struggling with "the same behaviors over and over." Teams are even less clear on the behavior and emotional supports needed at different levels than they are with the academic RtI system and referral process. Teachers (both members of the RtI committee and otherwise) can advocate that representatives from each team meet with the RtI committee monthly to stay informed. Teachers can also work with the committee to compile sets of tiered supports to provide teams and a unified system for RtI data collection. They can be leaders in communicating the RtI process to other educators in the building.

Giving students tools that they can take with them to navigate school and life is crucial. Jones et al. (2004) describe that effective interventions for students with emotional and behavioral needs include "assisting students with EBD in understanding themselves, helping them learn to effectively manage their emotions, and assisting them in understanding that they are ultimately self-determining individuals" (p. 4). Teachers can build social skills in the classroom with Skill Streaming (McGinnis, 2012) and Social Thinking (Winner, 2008) to help students learn and regulate their emotions, and then transfer and generalize these skills outside the classroom. They can also teach students self-advocacy skills to build self-determination. Part of our responsibility as educators is to share these resources with other teachers. Though it is daunting to look at the entire system of education, teachers can make a change in one small piece of the system for at least a group of students.

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Appendix A
SCHOOL BEHAVIORAL SUPPORTS ASSESSMENT INSTRUMENT ADOLESCENT EDUCATION

Circle one, I am a

district administrator school administrator teacher

parent student other _____

Please answer the following questions about your school district to the best of your ability.

1. Students are placed in a learning environment that best meets their behavior and academic need
   1 – Never 2 – Sometimes 3 – Usually 4- Always 0- Not Applicable

2. Counselors, social workers and/or school psychologist are readily available at a time of need
   1 – Never 2 – Sometimes 3 – Usually 4- Always 0- Not Applicable

3. Staff and teachers receive professional development related to working with students with emotional disorders and challenging behaviors
   1 – Never 2 – As needed 3- at the start of job 4 – annually 0- Not Applicable

4. There is a district wide system for developing and assessing plans for students with challenging behaviors
   1 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

5. Schoolwide expectations are reviewed periodically as a staff.
   1 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

6. School administrators periodically review schoolwide expectations with students.
   1 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

7. Teachers periodically review schoolwide expectations with students.
   2 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

8. Staff and students are familiar with the published school code of conduct.
   1 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

9. Teachers and staff appropriately deal with negative student behavior.
   1 –Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

10. Teachers consistently enforce behavioral expectations.
    1 – Never 2 – Sometimes 3 – Usually 4- Always 0- Not Applicable

11. Teachers attempt to build relationships with individual students
    1 – Never 2 – Sometimes 3 – Usually 4- Always 0- Not Applicable

12. Student social skill learning is supported at school
    1 – Never 2 – Sometimes 3 – Usually 4- Always 0- Not Applicable

13. Teachers have a consistent method for communication with parents/guardians.
    1–Disagree 2 – Somewhat 3 –Agree 4 – Strongly agree 0- Not Applicable

14. School personnel make home visits.
    1 – Never 2 – Sometimes 3 – Usually 4-Often 0- Not Applicable

15. Parents/guardians are active participants in addressing concerns related to their child's behavior.
    1 – Never 2 – Sometimes 3 – Usually 4- Often 0- Not Applicable

Thank you!

Appendix B

Email to Middle School Building Teachers

Subject: graduate school survey
XXXXXXXXXXXXXX

Dear Educator,

I am conducting a survey for one of my Graduate classes at XXXXXXXX College. I understand that your plates are very full, but I would appreciate if you could take the time to complete this brief survey. If you have time, I have attached the template I was given by the College. Please either email the completed document back to me or print and place in my mailbox. For your convenience, I have also placed a hard copy of the survey in your mailbox.

Thank you very much in advance for your help! Best,

XXXXXXXXXXXXXX
Team 6-3
Special Education Teacher
XXXXX Middle School

Teachers' Instructional Language with Children with Mild and Severe Language Difficulties in Self-contained Special Education Classrooms

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Abstract

Teachers' instructional language is often described as key in facilitating the learning of children with disabilities. This article explored two teachers' instructional language as used in interactions with children with mild and severe language difficulties in one-on-one instructional sessions. The results showed that teachers used more declarative sentences to convey information with students with mild communication difficulties and more imperative sentences to express requests with students with severe communication difficulties. The language used across all students was mainly on the concrete level, with little opportunity to facilitate higher levels of cognitive activities. One teacher used longer sentences with a student with mild impairments than with a student with severe language difficulties. The most frequently used words reflected the use of core vocabulary in the classrooms. Implications and limitations of the study are discussed.

Keywords: instructional language, communication difficulties, special education

Teachers' Instructional Language with Children with Mild and Severe Language Difficulties in Self-contained Special Education Classrooms

Introduction

Although the role of the language environment in the classroom and its impact on students' learning can often be taken for granted, the nature of the language use of teachers in interactions with children with disabilities remains pivotal in determining the outcomes of the students' learning. The features of teachers' instructional language and the ease with which students are able to understand teachers' language use can play an essential facilitating role in learning (Cooper & Good, 1983; Freer, 2008). There has been increasing interest in education research to explore the role of language in learning. In science and math education, researchers have investigated the impact of instructional discourse on facilitating students' thinking and academic achievement. Firmender, Gavin, and McCoach (2014) found positive relationships between teachers' instructional styles (e.g., encouraging and engaging students in the use of mathematical vocabulary) and students' mathematical achievements as reflected in their assessment scores. Rowell and Ebbers (2004) examined the instructional discourse of science lessons in elementary classrooms and concluded that descriptive explanations predominated. They recommended more relational and explanatory explanations in teachers' instructions to facilitate students' skills in constructing explanations for scientific phenomena.

The instructional language of teachers working with students with disabilities has become especially important because of the student's developmental and learning challenges (Kim & Hupp, 2005). However, research on teachers' teaching styles and their instructional language uses has been a relatively neglected area. Rimm-Kaufman, Voorhees, Snell, and La Paro (2003)

pointed out that special education research literature was abundant in relation to studies of curriculum materials, teaching plans, and instructional strategies, without much attention to the teachers themselves or their knowledge, skills, and styles of instruction.

Interactions between Teachers and Students

Studies focusing on the interactions between teachers and students with disabilities have, so far, tended to conclude that teachers have not been providing optimal linguistic environments in inclusive settings. First, teachers' perceptions of the students' impairments and their understanding of communication, language, and speech might be decisive factors in teachers' instructional and speaking styles. Jordan and Stanovich (2001) found that in inclusive classrooms, teachers' levels of cognitive engagement during interactions were decided by their beliefs related to the children's etiology. If the teachers attributed the student's learning difficulties to permanent characteristics of the student that were beyond the teacher's mandate, then there would be less frequent interactions with this student, and the interactions that did occur would be with low levels of cognitive engagement.

Second, teachers provided fewer interactive opportunities and used a more directive way of teaching with children with disabilities. Chapman, Larsen, and Parker (1979) revealed that children with learning disorders received more teacher criticism than their peers and had fewer opportunities to respond to open questions in the general classroom. Teachers showed more initiated interactions and communication engagement with high-achieving students than low-achieving students and students with disabilities (Dukmak, 2010; Jordan & Stanovich, 2001).

National Center for Education Statistics (2021) reported that 13.1% of students in special education spent less than 40% of their time in a regular class. Self-contained classrooms usually have a small number of children with a variety of special needs. The teacher may have extra training in special education and receive help from one or more paraprofessionals. Evidence has shown that, during one-on-one sessions, teachers were more likely to address the diverse learning needs of exceptional children and increase the extensive use of students' responses to guide the building of the interaction (Jordan, Lindsay, & Stanovich, 1997). However, studies on teachers' instructional styles in self-contained special education classrooms have suggested that special education teachers did not seem to provide a supportive linguistic environment during their verbal instruction and interactions with students with disabilities. Instead, teachers tend to provide directive rather than responsive verbalizations, and the most frequently used response was acknowledgement, which seldom led to further communication (Beattie & Kysela, 1995). Kim and Hupp (2005) found that teachers used directions more than twice that of responses with students with cognitive disabilities and concluded that the current instructional patterns of special education teachers were insufficiently responsive as interaction partners and insufficiently directive as instruction providers. Students' engagements in one-on-one intervention were limited if the teachers did not focus on the development of their interactive styles through training (Nind, Kellett, & Hopkins, 2001).

Instructional Language

The link between language development and language exposure of typically developing children was evident in the literature. Chapman (2000) stated that frequent, relatively well-tuned, affectively positive verbal interactions played critical roles in facilitating language growth in

early childhood. In terms of children's development of expressive language, Justice, Mashburn, Pence, and Wiggins (2008) concluded that children who received a relatively large amount of quality language instruction might experience accelerated expressive language growth during their pre-kindergarten years.

Children with disabilities benefit from well-planned instructional language to accommodate their language difficulties. Studies have shown that simplified instructional language was more effective than complex language to teach receptive language skills to young children with severe levels of Autism Spectrum Disorder (ASD) (Clark, 2000; Murphy, 2006). Clark (2000) used an alternating treatment design to compare the accuracy of responses to visual discrimination tasks instructed by different types of instructional language. The results showed that students with severe levels of ASD were more likely to benefit from a simplified instructional language than children with a mild level of ASD. Murphy (2006) compared the effects of simple versus complex instructional language on children's acquisition and generalization of receptive language tasks and found that all children with ASD learned receptive tasks in fewer sessions when their teachers used simple rather than complex instructional language. Special education teachers' instructional language could, therefore, affect the academic and language outcomes of children with disabilities.

Although teachers' instructional language affects students with disabilities' academic performances and their learning experiences in the classrooms, little is known about the characteristics of the teachers' instructional discourse when working one-on-one with students with mild and severe communication difficulties. Popich and Alant (1997) in a study on interactions between a teacher and the speaking and non-speaking children in a classroom, found that the teacher directed 10% fewer interactions at the non-speaking students in the classroom. They also found that the teacher's interactions with the non-speaking children were dominated by questions, attention directing, and requesting, which suggested that the non-speaking children's learning experiences differed from the speaking children in the group setting. It would be of interest to see whether a similar pattern exists when special education teachers work one-on-one with children with mild (usually speaking) versus severe (usually non-speaking) communication difficulties.

Purpose of Study and Research Questions

This study explored whether teachers use different instructional language according to the students' language competencies. It is a descriptive analysis of teachers' instructional language during one-on-one scholastic work on reading, writing, and mathematics in self-contained special education classrooms. The research questions for this study were:

1. What are the characteristics of special education teachers' instructional language during one-on-one instructions?
2. What are the differences (if any) between teachers' instructional language with students with mild versus severe communication difficulties?
3. Do these differences (if any) exist across two teachers in two self-contained classrooms?

Method

Setting and Participants

Two self-contained classrooms were identified from two elementary schools: one with 21% of the students eligible for free or reduced-price lunches and the other with 35.4% of the students receiving free or discounted lunches. Both self-contained classrooms had been in place for more than 20 years to serve students with mild to severe disabilities from local districts.

The special education teachers (see Table 1) in these two classrooms were recruited as the participants. They both held bachelor's degrees in special education and worked with children with different language abilities in their daily work. The first teacher had seven years of teaching experience in a self-contained classroom and an additional ABA license; the second teacher had 28 years of teaching experience and 12 years of work in the self-contained classroom. There were usually eight to 10 students and three paraprofessionals in their self-contained special education classrooms.

Two students (see Table 1) were identified by the special education teacher in each classroom: one with the most severe language impairment and one with the least severe (mild) language impairment. As reported by the teachers and shown by their IEP documents, the two students with severe language impairments were both non-verbal in kindergarten. In comparison, the two students with mild language impairments were capable of producing short sentences, answering simple 'wh' questions, and following one-step directions by grade one. These two students (Student A with severe communication difficulties and Student B with mild communication difficulties) were recruited as the student participants in each classroom and their scholastic one-on-one sessions conducted by the teachers were recorded and analyzed.

Table 1

Description of the teacher participants and student participants

Descriptions	Teacher 1	Teacher 2
Gender	F	F
Age	32	51
Race/Ethnicity	Asian American	Caucasian
Years of teaching	7	28
Years in self-contained classroom	7	12
Highest Degree	Bachelor	Bachelor
Licensure (disability)	Moderate to severe	Moderate to severe

Classrooms	Student A	Student B
With teacher 1	Child (severe): Grade K; ASD; non-verbal; one-step instruction	Child (mild):Grade 1; Cognitive; utterances +3; answer wh-; read 30 sight words
With teacher 2	Child (severe):Grade K; Cognitive; non-verbal; one-step instruction	Child (mild): Grade 1; ASD; utterances +3; answer wh-; read 50 sight words

Procedures for the Data Collection

The two self-contained special education classrooms were identified based on the students' grade levels (early elementary) and the willingness of the teachers to participate. Documents, including IRB approval, parents' consents, and teachers' consents, were obtained. One-on-one instructions took place in cubicles in these classrooms. One teacher and one student sat side-by-side at the desk working on academic skills. An audio recorder was used to record the teachers' instructional language with the two students. The recorder was disguised as a crayon box and placed next to the teachers and students during the instructions. Each session was about 15 to 25 minutes long. The curricula and activities in the two classrooms were similar. Both classrooms used behavioral-based intervention programs as the basis for their instructions. The programs provided a briefly scripted teaching guide for instructions, but neither of the teachers followed the scripted instructions strictly. The recordings lasted for two weeks, with one or two samples each day. Five of the scholastic sessions for each student were randomly chosen from the recordings and transcribed.

Table 2

Description of the recorded and analyzed data

Classroom	Student	Severity	Verbal	Sessions recorded	Sessions analyzed	Analyzed minutes	Analyzed activities	Materials used
1	A	Severe	Non-verbal	13	5	107	Imitation; coloring; number; handwriting; shared reading	STAR program; toy basket; token board; number card; coloring page, crayons; timer
	B	Mild	Verbal limited	15	5	96	Words and reading; social skills/exchange; counting	Edmark book; dry erase board; eraser; token board; flash cards
2	A	Severe	Non-verbal	10	5	113	Imitation; coloring; number; picture matching; color identification	STAR program; token board; white board; number card; coloring page; crayons; cards; timer
	B	Mild	Verbal limited	12	5	104.5	Reading; social skills/exchange; counting; handwriting	Edmark book; dry erase board; eraser; handwriting paper; token board

Coding and analysis

Choosing a scholastic session was based on the following considerations. First, the teachers' instructions must have mainly happened during a scholastic one-on-one intervention in the self-contained classroom. Second, scholastic work on pre-academic skills, literacy, and math has been widely researched with practice guidelines and best practice recommendations.

Sentence functions and sentence types are common indicators of discourse characteristics. The current study followed the classification of sentence function in Popich and Alant's (1997) study with minor adjustments. The sentence functions included the following: questioning, attention directing, requesting, imitating, negating, affirming, greeting, repetition, informative, praising, and uncodable. The sentence types followed the traditional classifications of declarative, exclamatory, imperative, and interrogative.

In addition to the linguistic features, the level of cognitive demands elicited by the teachers' instructional language might vary between children with mild and severe communication difficulties (Jordan, Lindsay, & Stanovich, 1997). The current study adopted the scale of abstraction (i.e., matching perception, selective analysis of perception, reordering perception, reasoning about perception) defined by Blank, Rose, and Berlin (1978) because the scale has been commonly used in studies with young children. It is important to explore the level of abstraction of teachers' instructional language to see whether a difference exists in the level of cognitive demands with children with different levels of communication difficulties. Table 3 shows the classifications of the sentence types and sentence functions as well as the levels of abstraction with examples from the data.

Table 3

Classification and examples of the coding

Types of coding	Coding	Examples
Sentence types	Declarative	It is a rubber bear!
	Exclamatory	That is awesome!
	Imperative	Put the horse in the box.
	Interrogative	Are you ready for your first sentence?
Language functions	Repeating	Ball! Ball!
	Affirming	Yes, it is a red horse.
	Attention directing	My turn.
	Greeting	Hi, how are you today?
	Imitating	Twenty two
	Informative	The bear is jumping!
	Negating	Not so much!
	Praising	Excellent job!
	Questioning	What do we need first?
	Requesting	Show me jumping!
Cognitive level	Matching perception	Show me the ball!
	Selective perception	Can you show me the dog pushing?
	Reordering perception	Baby sitting! Where are you sitting?
	Reasoning about perception	Do they get stuck? Can they get down from the tree?

The audio recordings were transcribed verbatim by the first researcher. To ensure that the raw data were transcribed accurately and consistently, the transcription rules proposed by Stuart, Vanderhoof, and Beukelman (1993) were followed to transcribe vocalizations, contractions, and communication segments. The transcripts of the first two recordings (one from each classroom) were checked by an independent transcriber who was blinded to the purpose of the study. Points of accuracy and disagreement were discussed until 100% agreement was achieved. The researcher then finished the transcription for the rest of the data.

Nvivo ™ was used in the qualitative data analysis with the identification of the linguistic functions, sentence types, and the levels of abstraction of teachers' instructional discourses. The total number of utterances, frequency of different linguistic functions performed, sentence types, and scale of abstraction were selected for comparison and analysis. Twenty transcripts (five for each student) were loaded into Nvivo and manually coded (see Table 3). The data were further analyzed using Microsoft Word and Excel to determine certain linguistic features, including average sentence length (defined by words per sentence), sentences per minute, and words per minute to characterize the linguistic features of the teachers' instructional language.

Type/Token Ratios (TTR) have been extensively used in child language research as an index of lexical diversity (Richards, 1987). TTR is the ratio obtained by dividing the types (i.e., the total number of different words) occurring in a text or utterance by its tokens (i.e., the total number of words). A high TTR indicates a high degree of lexical variation, while a low TTR indicates the opposite. Online text analyzer (http://textalyser.net/) was used to identify the lexical variations and the top frequency words used in the teachers' instructional language.

Reliability

An independent rater who was blind to the research questions coded 10% of the transcripts using Nvivo ™. The inter-rater reliability was estimated by calculating the number of agreements and disagreements times 100 for each of the transcribed language samples. The reliability was checked for coding of sentence type, sentence function, and level of cognitive abstraction. The agreement rate for sentence type was 82.7%, for sentence function was 80%, and for the level of cognitive abstraction was 73.3%.

Findings

Sentence Type

Initial data analysis showed that both teachers used similar instructional languages in their classrooms when working with students with mild language difficulties. Teacher one used primarily declarative sentences (39.6%) with the verbal student. The most frequently used sentence functions were informative (29.4%) and requesting (21.9%). Teacher two used primarily declarative sentences (34.5%) with the verbal student, and the top two frequently used sentence functions were informative (20.5%) and requesting (26.8%).

Table 4
Percentages of sentence type

Sentence type	Classroom One		Classroom Two	
	Student A (severe)	Student B(mild)	Student A (severe)	Student B(mild
Declarative	25.99	39.59	28.1	34.5
Exclamatory	15.86	8.50	16.64	8.4
Imperative	34.28	26.65	36.5	25.8
Interrogative	7.07	12.07	5.8	14.2
Uncodable	16.8	13.19	12.96	17.1

Sentence Function

With students with severe language impairments, imperative sentences (34.3%) were most commonly used by teacher one, and the most frequently used sentence functions were requesting (23.3%) followed by informative (13.4%) and praising (13.3%). Teacher two mostly used imperative sentences (36.5%) with the student with severe language impairments. The top sentence functions were requesting (30.5%) and repeating (15.32%), followed by praising (11.8%).

Table 5
Percentage of sentence functions

Sentence function	Classroom One		Classroom Two	
	Student A (severe)	Student B(mild)	Student A (severe)	Student B(mild
Repeating	7.88	6.9	15.32	6.5
Affirming	7.01	2.7	9	2.5
Attention directing	9.86	2.51	11.2	4.1
Informative	13.42	29.35	10.45	20.47
Requesting	23.34	21.97	30.5	26.8
Questioning	4.57	11.2	2.6	13.26
Praising	13.32	7.48	11.8	7.1
Imitating	1	2.02	0	2.4
Greeting	0.5	1.2	0.4	1.2
Negating	0	0.53	0	0
Uncodable	19.1	14.14	8.73	15.67

Levels of Abstraction

The analysis of the levels of abstraction that provoked thinking revealed that most of the first teacher's instructions were on the level of "selective perceptions" (34.3%) to the verbal student and on the level of "matching perception" (33.9%) to the non-verbal student. Most of the second teacher's instructions were on the level of "matching perception" with both the verbal (33.1%) and non-verbal students (38.3%) and "selective perception" with the verbal student (32.8%). Higher levels of cognitive activities, such as "reordering perception" and "reasoning about perception," only counted for a small percentage of the utterances.

The first teacher used 10.7% of her instructional language to provoke reordering of perception with the child with mild language difficulties and 4.4% of her instructional language to provide reasoning opportunities. The second teacher used 13.8% of her instructional language to provoke reordering of perception with the child with mild language difficulties and 6.9 % of her instructional language to provide reasoning opportunities. For the children with severe language difficulties, both teachers used less than 3% of their instruction language to elicit reordering and reasoning of perceptions.

Table 6
Percentage of the levels of abstraction

Sentence type	Classroom One		Classroom Two	
	Student A (severe)	Student B(mild)	Student A (severe)	Student B(mild
Matching	33.99	22.17	38.3	33.08
Selective	15.94	34.3	19.44	32.83
Reordering	2.9	10.65	2.75	13.81
Reasoning	1.18	4.35	0.61	6.9
Uncodable	45.99	28.53	38.9	13.38

Length of the Instructional Language

In classroom one, the teacher delivered more instructional sentences per minute with the student with mild language difficulties (25 sentences per minute) than with the child with severe language difficulties (11.96 sentences per minute). The teacher constantly gave quick prompts to the student with mild language impairment for the identification of pictures, numbers, and counting. The teacher provided long response times for the child with severe language impairment. Although the teacher talked less with the student with severe language difficulties, the sentence lengths (3.05 words/sentence; 2.9 words/sentence) and word lengths (3.6 characters/word; 3.52 characters/word) of the teacher's instructional language were comparable between the two children.

In classroom two, the teacher delivered more instructional sentences to the student with severe language difficulties (19.4 sentences per minute) than to the student with mild language difficulties (16.84 sentences per minute). However, the sentences with the student with mild language difficulties were longer (5.6 words per sentence) than those sentences with the student with severe language difficulties (2.7 words per sentence). The teacher gave quick prompts to the child with severe language difficulties in the activities of matching, imitating, and coloring, and provided positive verbal reinforcement constantly, which explained the short, but frequent instructional sentences. With the student with mild language difficulties, the teacher used full and elaborate sentences to deliver more informative instruction. The word lengths with the students (mild: 3.56 characters per word, severe: 3.62 characters per word) were comparable.

Across the two classrooms, both teachers delivered more words per minute with the student with mild language difficulties than with the student with severe language difficulties. They both used around twice as many words with the student with mild language difficulties as with the child with severe language difficulties. The sentence length was an area of a large discrepancy, but the sentence lengths with two students with severe language difficulties between the two classrooms

were comparable. The word lengths were comparable among the four children from the two classrooms.

Table 7
Length of the instructional language

	Classroom 1		Classroom 2	
	Mild	Severe	Mild	Severe
Activities	Identification of pictures on books, Identification of numbers, counting objects	Choosing pictures PECS training	Reading sight words, handwriting, counting objects, number recognition.	Matching pictures, matching numbers, imitate actions, coloring.
Average minutes of instructions	21.4 (SD=3.6)	19.2 (SD=2.7)	22.6 (SD=3.1)	20.9 (SD=3.5)
Sentences/minute	25 (SD=4.97)	11.96 (SD=1.21)	16.84 (SD=0.9)	19.4 (SD=3.94)
Words/minute	76.35 (SD=9.12)	35.87 (SD=4.42)	94.76(SD=10.52)	53.1 (SD=6.87)
Words/sentence	3.05 (SD=0.35)	2.9 (SD=0.28)	5.6 (SD=1.27)	2.7 (SD=0.42)
Characters/word	3.6 (SD=0.14)	3.52(SD=0.083)	3.56(SD=0.089)	3.62 (SD=0.10)

Notes: values are the mean value; SD=standard deviation

Type/Token Ratio

The Type/Token Ratio (TTR) analysis shows that both teachers used lexicons with similar variations. In classroom one, the TTR was 22.1% with the student with mild language difficulties and 20.4% with the student with severe language difficulties. In classroom two, the TTR was 26.6 % with the student with mild language difficulties and 20.9% with the student with severe language difficulties. It seemed that both teachers were using words with more variety with the students with mild language difficulties than with the students with severe language difficulties. The lexicon variety with the students with severe communication difficulties was comparable in both classrooms.

The top 10 frequently used words in the sample are listed in Table 8. The pronoun “you” was the most frequently used word with all the students regardless of the severity of their language difficulties. The child’s name was the second most frequently used word with children with severe language difficulties in both classrooms, the sixth most frequently used word with the child with mild language difficulties in classroom one, and the third most frequently used word with the child with mild language difficulties in classroom two.

The words “good” and “your” were among the top 10 most frequently used words for all four students. The question word “what” was the second most frequently used word with both children with mild language difficulties, but was not among the top 10 most frequently used words with either child with severe language difficulties.

Table 8
Type/token ratio and top frequency words

		Classroom 1		Classroom 2	
		Mild	Severe	Mild	Severe
Type/Token Ratio		22.1%	20.4%	26.6%	20.9%
Top 10 frequency words	1	you	you	you	you
	2	what	child's name	what	child's name
	3	good	good	child's name	good
	4	your	look	right	want
	5	turn	job	good	give
	6	child's name	your	your	ball
	7	name	turn	going	your
	8	want	here	need	job
	9	job	ready	token	toys
	10	right	want	number	fish

Discussion

Both teachers showed similar patterns in terms of their use of sentence types and sentence functions in both classrooms. Both teachers' instructions were dominated by declarative sentences to provide information and imperative sentences to make requests of the students with mild language impairments. This finding indicated directive rather than interactive features of the instructions (Beattie & Kysela, 1995; Kim & Hupp, 2005). Imperative sentences to request and command were the dominant language style of the teachers with students with severe communication disabilities. Similarly, prior research has shown that mothers' language with infants with disabilities had a higher level of command and controlling questions (Edwards, 1991; Garrard, 1986). Teachers and mothers might have more in common with each other in their interactive styles with children with disabilities.

Compared to the students with mild language impairment, the students with severe language impairment were exposed to different instructional language that offered more opportunities to respond by actions. Almost twice as much affirming, redirecting, and praising occurred in this group, and less than half of the questioning was directed at the children with severe language difficulties. Teachers' assumptions of the children's low language abilities might explain the fewer opportunities for children with severe language difficulties to respond to questions and engage in interactions (Light & McNaughton, 1993).

Teaching should involve the selection of questions and directions that prompt learners to engage in the construction of developmentally progressive conceptual networks (Vygotsky, 1978). The language function of questioning was used less than 5% of the time with the non-verbal students and less than 15% with the verbal students. Chiang and Lin (2008) defined expressive communication as actively conveying information to a communicative partner; behavior responding or complying with requests was not included in the definition. It seemed that teachers were not encouraging students to be active communication partners and were not considering the instruction as being conversational.

Most of the language promoting abstraction and thinking stayed on the level of "matching perceptions" for all the participants, which meant that the students mostly had chances to identify, name, match, and imitate. Rich instructional language serving various functions and facilitating higher levels of cognitive activities is needed for students, regardless of whether they have mild or severe language difficulties. Razgunas (2007) compared the effects of shared book-reading with Head Start children along levels of language abstraction and concluded that children read to with 60% of questions at concrete levels and 40% at abstract levels made more pronounced language gains and showed greater generalizations during post-intervention testing than the control group. It seemed that the teachers in this current study were using language at a concrete level (matching and selecting perceptions) for more than 90% of the time with all of the students regardless of the severity of their language difficulties.

The teacher in classroom one used sentences with similar lengths with both students, but the teacher in classroom two used longer sentences with the student with mild language difficulties. The teacher in classroom two also used a greater variety of vocabulary, indicated by the TTR, with the student with mild language difficulties. Although the word lengths were similar among the four children, the most commonly used words with the children with mild disabilities were wh-words, indicating a more interactive instructional style than with the children with severe language difficulties (Beattie & Kysela, 1995; Chapman, Larsen, & Parker, 1979; Kim & Hupp, 2005).

Core vocabulary refers to the small number of words that make up 70% - 90% of what we say on a daily basis. These words are relevant across contexts and can have many meanings. The most frequently used words in the two teachers' instruction reflected the core vocabulary appropriate for the kindergarten to first grade age. A core vocabulary approach has been widely used in language therapy (Dodd, Holm, Crosbie, & McIntosh, 2006). Therefore, it should be used in the teachers' instructional language to facilitate the students' understanding and use of these words across contexts.

In the current study, the identification of students with either mild or severe language difficulties by the teachers reflected the teachers' perceptions of the students' disabilities and their language skills. It seemed that the teachers' adopted different instructions based on the students' disabilities and provided different levels of interactions paired with the severity of the language impairment (Jordan & Stanovich, 2001). It was of significance that the teachers were able to match their own use of language to that of the children to allow for meaningful interactions and effective instructions to occur.

Limitations and Implications for Future Research and Practice

The interactions between the teachers and children in the classes were largely related to the provision of the interaction opportunities by the teachers (Beukelman & Mirenda, 1992). However, many teachers ignore the significance of the interactive nature of instruction and just provide recitational instructional discourse, such as scripted instructions (Commeyras, 2007; Dresser, 2012). The current study showed that the teachers' instructional language in the two self-contained classrooms was directive, rather than interactive, and there were more similarities than differences when working with the students with mild versus severe language difficulties.

The students with mild and severe communication disabilities manifested different levels of receptive and expressive language skills, which should necessitate differentiated instructions. Differentiated instruction is an instructional theory that allows teachers to meet the needs of students with mixed abilities (Ernest, Thompson, Heckaman, Hull, & Yates, 2011). Teachers should take diverse factors into account when planning and delivering instruction, among which mapping their own use of language to that of the students is especially important for the facilitation of learning and communication.

The current study was small-scale. Therefore, the results can only be interpreted in the context of the study. In addition, the results are illustrative of the characteristics of the participating teachers and their students. The curricula used in both classrooms were behavior-based. The students were required to follow directions and respond to requests either verbally or behaviorally. Therefore, the findings in this study might reflect part of the feature of the curricula instead of the teachers' abilities to differentiate interactions with students according to their expectation of the students' capabilities to respond (Cooper & Good, 1983; Popich & Alant, 1997). Teachers' perceptions and attitudes influence their communication styles and engagement in interactions with children with disabilities (Jordan & Stanovich, 2001). However, it was not clear how the teachers differentiated and modified their instructions based on the students' language levels in the current study. In future studies, teacher interviews should be conducted with questions about the students' language abilities to correlate the teachers' perceptions of the students with their use of instructional language.

In addition, special education preparation programs should provide more training to develop student-oriented instructional strategies. Nind et al. (2001) introduced intensive interaction training for teachers to talk with children with severe disabilities with the purpose of achieving better interaction engagement. By integrating instructional language into instructional planning, both teaching and learning effectiveness should be improved in the practice of special education.

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