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Teaching Special Education During the COVID-19 Pandemic: An Exploratory Mixed Methods Analysis

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Abstract

The arrival of the global pandemic transformed the system of teaching and learning instantaneously for school staffs, students and their families. It has become more apparent that the change in *venue* has brought about conditions that directly impact the quality of the teaching and the degree to which students learn. Special educators in particular, given the heterogenous nature of those that they teach and their unique learning needs, are faced with challenges that are arguably beyond most other educators. The current study utilized a mixed-methods approach in an effort to investigate and delve into the perspectives special education teachers hold related to: (a) The support and training they received; (b) Feelings of self-efficacy; and (c) general impressions about the students and families they interact with. General results and analysis were indicative of several findings. Specifically, that special education teacher participant felt supported by their faculty and administrative staffs, the teachers did a significant amount of independent learning, that their respective pre-service, formal training was lacking in preparing for virtual learning, and all participants reported significant additional stress challenges, including working with technology. Limitations and future research possibilities are discussed.

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Introduction

In response to the Coronavirus pandemic (COVID-19), educators were tasked with making the rapid and unexpected shift to virtual learning. Virtual teaching, via ZOOM©, has enabled geographically separated people to meet on an online platform. It is becoming more apparent that the change in *venue* has brought about conditions that directly impact the quality of the teaching and the degree to which students learn. The current study sought to investigate the impact of the Coronavirus pandemic on special education teachers' overall attitudes and experiences toward virtual learning with respect to their stressors, satisfaction, and challenges.

Stakeholders

Special Education Students

Due to the present societal circumstance, the reality for a great majority of special education students is that virtual learning has become the primary mode for teaching students with special needs (Birch & Lewis, 2020; Nelson & Murakami, 2020). Considering the limited research available at present with a focus on special education student and virtual learning, practitioners are reassessing the extent to which there is a sense of connectedness and engagement. This concern was highlighted by a data collection effort in the State of Texas. In the 2020 Texas Education Agency report, it showed that one in ten students (11.3%) were *disengaged* or were *not contactable during the crisis*. One school district with 489,000 students in a metropolitan area in Texas lost contact with 9,300 students in the initial weeks after the school closures (Phillips 2020, in Nelson & Murakami, 2020). To compound matters, these findings highlighted the reality that special education, disadvantaged students displayed a higher degree of disengagement. The extent to which students were disengaged highlighted some other critical factors that emerged when schools moved to online delivery; specifically: (a) Managing and adapting behaviors; (b) Communication (i.e., receptive and expressive); (c) The adaptation and modification of instructional materials; and, (d) Other related and/or specialized services. On a more positive note, Marteney and Bernadowski (2016) investigated other aspects of virtual learning and provide evidence from a small-scale survey of special education teachers' perspectives. They identified positive effects of online instruction and the achievement for special needs students. They include: (a) Ease accessing learning activities; (b) Documented improvements in academic performance; (c) Success and comfort with self-paced education (*see* Fredricksen & Shea, 2000); (d) Increased motivation; and (e) Availability of individualized support.

As future research is conducted to further investigate the impact of COVID-19 on the learning of special education students, it is highly probable that parents and home environments will also be found to experience personal stressors and challenges of similar complexity.

Parents and Home Environment

While research has been conducted on parental involvement in K-12 online learning, little to no information exists relative to the parents of students with disabilities (Burdette & Greer, 2014). The challenges that parents face in response, to the Coronavirus pandemic, are new and unique and require further investigation in order to better understand the needs of parents and families. This is especially true as it related to how children are able to access their education and develop a sense of autonomy, independence and self-discipline. Some research contends that there is a negative correlation to student achievement when parents take on a major role in their child's learning (Black, 2009 in Burdette & Greer, 2014). The shortage on research efforts is even greater if one seeks to gain some understanding or insight gleaned from the parents of special needs students.

In response to the scarcity, Greer and Burdette (2014) conducted a study to investigate special educations students' parent's perspectives on virtual learning. Burdette and Greer (2014) developed and distributed a survey to 119 parents of special education students participating in remote/online learning. They noted no significant differences between the K-8 and high school parents' responses. As for the quality of support they felt they received, 62% *agree* or *strongly agree* that the support was appropriate. As for whether they[parents] were well prepared to make online instruction decisions for their children, 66% *agree* or *strongly agree* that they were well prepared. In another study, Thompson, Ferdig, and Black (2012) found that there were some personally satisfying reasons parents provided for looking favorably at online programs and schools designed for students with disabilities. They appreciated the personalized nature of this type of schooling, the advantages of remaining home, the ability to allow students to work at their own pace, and being able to support students in a nurturing environment away from the social and behavioral challenges of physically attending school.

As one considers the contentions of these researchers, it is important to keep in mind that, unlike the present study, a great majority of literature on parents' experience with their child's online comes directly from parents' perspective. Conversely, the present study sought to gain an understanding of parents' experiences and challenges from the point of view of special education teachers. and not derived from teachers' inferences or conclusions. This delineation is important to keep at the forefront as one considers the data. To be clear, the information and evidence obtained derived from the viewpoint of special education teachers.

Teachers of Special Education

The global pandemic has challenged teachers' individual sense of teacher efficacy. The familiar way of delivering and receiving instruction was altered, leaving teachers feeling uncertain of their ability to best educate their students. The drastic and sudden transition from face-to-face instruction to virtual modes of learning will likely continue to threaten teachers' capacity to ensure positive outcomes for their students and their sense of self-efficacy will be challenged. Depending on the mindset of the teacher, this event may have far-reaching consequences for our nation's students; this is especially true for special education students who end up being among those most in need of support. In turn, researchers have prescribed that the professional development and ongoing training will bolster teaching skill in a virtual venue and build confidence in the work with special needs students. The emergence of the pandemic has resulted in researchers highlighting issues with planning instruction (Phillips 2020, in Nelson & Murakami, 2020), lesson delivery (Nelson & Murakami, 2020; Birch & Lewis, 2020) and, assessment of student learning (Smith et al, 2016). This immediate transmutation was particularly overwhelming for the veteran, in-service teachers who were charged with quickly learning about the implementation of the new educational technology.

Birch and Lewis (2020) purport that teachers need to feel confident in this new remote learning environment if they are to effectively impact student learning. This was concluded as a result of teachers' participation in a virtual learning workshop in which they described themselves as feeling *underprepared* and/or *lacking the resources, training and experiences* necessary for teaching virtually. Teachers' varying feelings of ineptness with virtual instruction highlights the pressing need for school leaders to understand their expanding role. Sheniger (2014) claims that some school principals understand this extension as *Digital Leadership*. That is, establishing a school culture that looks to incorporate concepts and practices that primarily focuses on equipping teachers with the skills they need to evaluate and apply relevant digital content. Pre-service and in-service teachers need support to: (a) Build confidence in their abilities to facilitate remote learning (i.e., self-efficacy); and, (b) Training on effectively using online platforms for instructional purposes.

Fernandez et al. (2016) suggest that most pre-service teacher preparation programs lack the training to work effectively in a virtual environment. The characteristics that describe in-person and virtual teaching present such a dichotomy that researcher contend that practitioners require a vastly different set of teaching skills. Similarly, to in-person teaching, virtual instruction requires teachers to: (1) Engage students in the learning, including quality questioning; (2) Manage cooperative groupings, materials, student behavior; and, (c) Monitor student progress via formative assessments. DiPietro et al. (2008) concluded that online instructors need to learn a set of skills, similar to those practiced in online post-secondary instruction, but unique to the K-12 online environment. Inline et al. (2009) summarized three categories of instructor-online competency that consist of: (1) Managing the online learning environment; (2) Preparing content; and (3) Utilizing Web-related tools and applications.

Special education teachers involved with virtual instruction require support along several dimensions to provide effective literacy instruction. Birch and Lewis (2020) purport that building partnerships that proactively address educators' learning needs through a microlearning model of professional development is an effective method for training teachers. Stevensen et al. (2015) extends this and suggests that providing teachers with professional learning, as they are forced to change to virtual teaching, should include: (a) Multiple platforms; (b) Online networks; and, (c) Repeated opportunities to *play* with technology. The use of technology cannot make an impact on learning unless practitioners find creative ways to implement technology in their teaching and learn to negotiate hardware and software issues. For this to happen, teachers must be properly trained on how to infuse technology into classroom curriculum and instructional practices (Wolf, 2006; Oliver et al., 2010). The *time* and opportunities provided to teachers to internalize concepts closely linked to virtual instruction are critical factors for teachers and administrators as they consider the possible *domino effect* the pandemic imposes on the supervision and evaluation of teachers.

The Current Study

The onset of the global pandemic transformed the system of teaching and learning overnight for school staffs, students and their families (Birch & Lewis, 2020). There has been a significant amount of research regarding the strengths and areas of concern for virtual learning. Of course, the most obvious is that virtual learning can help with dissemination of and access to educational materials for a broader scope. Still, when asked to transition to a virtual learning model unexpectedly, and in responses to a global pandemic, educators are faced with a host of challenges. Special educators in particular, given the heterogenous nature of those that they teach and their unique learning needs, are faced with challenges arguably beyond that of most other educators. Factors such as the role of school administration in support of their respective faculty, teachers' levels of preparedness, access to technology, and teacher's overall attitudes and experiences with virtual teaching require further investigation. These areas that are under-researched and require deeper exploration to better support students and teachers in the wake of the COVID-19 pandemic. In order to further evaluate these areas, the current study utilized a mixed-methods approach. The following research questions drove the aims and methods of this study:

1. To what extent do special education teachers feel supported by other faculty and administration in the transition to remote learning?
2. What are special education teachers' readiness to implement distance learning during the COVID-19 pandemic, based on their training and experience?

3. To what extent do special education teachers feel that they are still promoting positive outcomes?
4. From the teacher's perspective, do families have the technology and resources available for remote instruction?
5. What are special education teachers' overall attitudes and experiences toward remote learning with respect to their stressors, satisfaction, and challenges?

Methods

Participants

Ethical approval was obtained from the Institutional Review Board (IRB) at St. Joseph's College prior to recruitment. Recruitment took place by emailing a brief description of the study and a link to the survey to special education teachers and administrators across Long Island, New York. Due to the fact that the study was administered to some administrators who in-turn distributed it to teachers, the response rate is unknown. Participants in this study needed to meet the noted inclusionary criteria. These criteria included being at least 18 years of age, a certified special education teacher in the State of New York and employed as a teacher instructing children with special needs. Participants were asked screening questions via survey created for this study. Demographic information is presented in Table 1.0. There was a total of 43 participants (*N*=43) who completed the survey. The majority of responses were from female teachers, 39 of which work in public school settings. Most teachers who participated in the study were novice teachers with fewer than 5 years of teaching experience. The most common classifications served by the teachers in the study are with students exhibiting some form of autism or learning disabilities.

Table 1.0
Demographic Variables of Study Participants: Gender, Instructional Setting, Classification & Years of Teaching Experience

Gender	**N**	**%**	**Instructional Setting**	**N**	**%**
Male	6	13.3	**Public**	38	88.64
Female	37	86.6	**Private**	5	11.36

Classification of Students	**N**	**%**	**Years of Teaching Experience**	**N**
Autism	35	21.60	**1 – 5**	19
Learning Disabled	36	22.22	**6 – 10**	6
Emotionally Disabled	24	14.81	**11 – 15**	5
Other Health Impairments	33	20.37	**16 – 20**	4

Multiple Disabilities	19	11.73		**21 – 25**	4
Hearing/Vision Impairments	15	9.26		**26 +**	5
Total Endorsed	162				

Procedures

An online survey created for this study was used to collect self-reported data to gather more information about special education teachers' attitudes, experiences, and concerns related to distance education. Online data collection was chosen due to the ease of dissemination, particularly during the pandemic when social distancing was required. The application used for data collection, Qualtrics™ also has a user-friendly mobile interface for ease of participant use. Teachers who work with children with neurodevelopmental conditions such as autism and learning disabilities were targeted for participation if they met the above inclusionary criteria. Following collection of the demographic information, participants were asked to rate a number of statements using a 7-point Likert scale from Strongly Agree to Strongly Disagree. The specific, closed-ended questions asked, as well as the Likert scale used, are presented with the results in Tables 2.0, 2.1. 2.2, 2.3 and 2.4 (*see* Results section). Coupled with the quantitative measures, participants were also asked to respond to a number of open-ended questions. Teachers were provided with a *text box* for responses and were encouraged to *elaborate on responses as much as you would like*. These questions are presented in Table 3.0 (*see* Results section). A thematic, qualitative content analysis was conducted for the open-ended questions from the teachers' responses. Table 3.1 (*see* Results section) presents the themes that emerged as most prominent, the sub-categories that better describe each theme and teacher quotes that serve as examples and *add color* to conclusions and interpretations drawn by the researchers.

Data Collection and Analysis

To analyze the data gathered from the surveys, an exploratory mixed methods approach was utilized. In doing so, researchers used both inductive and deductive reasoning, and employed quantitative, qualitative and analytic techniques sequentially. In order to achieve these goals, a mixed-methods approach utilizing both a Likert rating scale and open-ended response were implemented. First, descriptive statistics were employed for the closed-ended statements by calculating the mean, standard deviation and variance for each item to assist with interpreting the findings. For the open-ended responses, an exploratory content analysis was performed by three researchers, independently. Each researcher reviewed the open-ended narrative responses and developed a coding system with specific categories and subcategories from which to classify all responses. Three researchers convened to compare their coding systems of categories and subcategories. Consensus coding was performed in which each of the three researchers that conducted the analysis reviewed their codes and discussed agreements and disagreements until consensus for each code was reached. The remaining three researchers reviewed and approved of the final coding system, subsequent categories and subcategories.

Since the questions presented are complex and specific to the COVID-19 pandemic there did not appear to be any predesigned, validated measures that would sufficiently answer these research questions. As such, a mixed methods approach was used that contained questions written by the researchers to assess each of these constructs. The literature is clear in that a mixed-method approach has the potential to build upon the strengths of both research methodologies. The rationale for employing a mixed method approach to the investigation was, in part, grounded un commentaries by Newman and Houchins (2018). They, in agreement with other researchers, contend that to address a host of complex issues in the field of special education, researchers have indicated the need for an increased use of mixed methods research. The resulting actions included: (a) Obtaining a more accurate reality with results that are corroborated by multiple sources; (b) Enhancing quantitative results with qualitative methods that provide descriptive information that deepen understandings: (c) Relying on direct involvement and input from participants/informants; and, (d) Strengthening the validity and reliability aspects of the findings and conclusions drawn. is strengthened when a balance between qualitative and quantitative perspectives is established; (*see* Bryman, 2006; Creswell & Plano-Clark, 2018; Newman & Benz, 1998).

To further elaborate on the need for a mixed-method approach, the present study reviewed the procedures and data collection activities of several other recent studies. Ahmed (2020) employed a mixed method approach to investigate the perspectives of high school teachers and classroom discipline management. Quantitative measure included questionnaires completed by the high school teachers) and the qualitative data source emerged from written incident reports. Machado and Wang (2019) investigated the perspective of pre-service teachers on using instructional strategies which are grounded in constructivist principles. They employed a quantitative survey from 57 preservice teachers and added color and detail to their conclusions by analyzing interviews, the course syllabi, and researchers' instructional narrative. Lastly, Daffern and Critten (2019) Investigated the perspectives of students and teachers, across the middle and upper grades, regarding spelling and spelling instruction. In the attempt to deepened their understanding of the relationship between these variables they used the discrete data from a dictation task (quantitative) and analyzed the student-generated narrative and expository writings, along with semi-structured interviews (qualitative).

With these in mind, the researchers of the present study concurred that in seeking to understand teacher participants perspectives would be incomplete if both methodologies were not utilized. When one considers the multitude of variables that interact on a minute-by-minute basis in a classroom, that inadvertently influence teaching methods and student learning, it became apparent that descriptive and narrative data would be necessary for a more comprehensive understanding. It became especially important, then, to delve into teachers' individual and collective knowledge, assumptions and beliefs about teaching and learning within a virtual setting. In turn, a component of the study was to investigate how teachers' self-efficacy impacts the overall achievement of special education students educated using virtual learning.

Results

Rating Scale Items

Results from the rating scale items are presented in separate tables, organized by area of inquiry. The Faculty and Administrative Support-based questions are presented in Table 2.0. The results yielded the following data. 34.88% (*N=15; SD 1.57*) of participants responded that they Strongly Agree with the statement *I feel supported by my department/instructional leaders during the transition to online/remote learning*. In response to the statement, *I have been provided with training opportunities at my current job geared toward being able to provide remote learning opportunities to children with special needs*, 25.58% (*N=11; SD 1.95*) of participants selected the two highest ratings, Strongly Agree and Somewhat Agree. It is notable that this question revealed the highest variance, specifically, 3.79. A majority of participants endorsed Agree (*N=16; SD 1.69*) in response to the statement *leadership has provided training/continuing education opportunities for helping teachers transition to remote learning*. Overall, the majority of participants felt supported by their department and instructional leaders.

Table 2.0

Descriptive Data Analysis of Closed-ended Response Questions: Faculty and Administrative Support

	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree	**MEAN**	**SD**	**VAR**
	I feel supported by my department/ instructional leaders during the transition to online/remote learning							**2.42**	**1.57**	**2.48**
N	15	13	7	2	3	2	1			
%	34.88	30.23	16.28	4.65	6.98	4.65	2.33			
	I have been provided with training opportunities at my current job geared toward being to be able to provide remote learning opportunities to children with special needs							**3.07**	**1.95**	**3.79**
N	11	9	11	2	2	4	4			
%	25.58	20.93	25.58	4.65	4.65	9.30	9.30			
	Leadership has provided training/ continuing education opportunities for helping teachers transition to remote learning							**2.60**	**1.69**	**2.84**
N	11	16	9	0	3	1	3			
%	25.58	37.21	20.93	0.00	6.98	2.33	6.98			

Results to questions related to Pre-service and Inservice Teacher Training and Experience are presented in Table 2.1. 32.56% (*N=14; SD 2.19*) of participants responded that they Strongly Disagree and 18.6% Disagree (*N=8; SD 2.19*) with the statement *my education (graduate or undergraduate) has prepared me to provide remote learning opportunities to children with special needs*. Similarly, eighteen of the participants (*41.86%; SD=1.31*) Strongly Disagree with the statement *I have previous experience with implementing remote learning opportunities to children with special needs*. In summation, responses to this question were significantly skewed toward disagreement, indicating that most participants felt as though their training and experience had not prepared them for remote teaching that promotes student learning.

Table 2.1

Descriptive Data Analysis of Closed-ended Response Questions: Pre-service, Inservice Teacher Training and Experience

	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree	**MEAN**	**SD**	**VAR**
	My education (Undergraduate or Graduate) has prepared me to provide remote learning opportunities to children with special needs							**4.72**	**2.19**	**4.81**
N	6	2	7	4	2	8	14			
%	13.95	4.65	16.28	9.30	4.65	18.60	32.56			
	I have previous experience with implementing remote learning opportunities to children with special needs							**5.95**	**1.31**	**1.72**
N	1	0	2	2	5	15	18			
%	2.33	0.00	4.65	4.65	11.63	34.88	41.86			

Results from questions related to Promoting Student Outcomes are presented in Table 2.2. 46.52% (*N=20; SD 1.69*) of participants responded that they Agree (N=10) and Somewhat Agree (N=10) with the statement, *I feel that I am effectively promoting student learning outcomes at this time*. 34.88% (N=15; SD 1.49) of participants responded that they Neither Agree or nor Disagree with each of the following statements; Specifically, *I am still able to maintain progress toward IEP goals and objectives at this time*, and, *there are significant benefits to providing remote learning in special education*. Notably, seven participants rated the latter question as Strongly Disagree (16.28%; SD 1.59).

Table 2.2

Descriptive Data Analysis of Closed-ended Response Questions: Promoting Student Outcomes

	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree	**MEAN**	**SD**	**VAR**
	I feel that I am effectively promoting student learning outcomes, at this time							**3.40**	**1.69**	**2.84**
N	5	10	10	9	1	6	2			
%	11.63	23.26	23.26	20.93	2.33	13.95	4.65			
	I am still able to maintain progress toward IEP goals and objectives, at this time							**3.91**	**1.49**	**2.22**
N	1	2	6	15	7	8	4			
%	2.33	4.65	13.95	34.88	16.28	18.60	9.30			
	There are significant benefits to providing remote learning in special education							**4.47**	**1.59**	**2.53**
N	2	1	8	15	5	5	7			
%	4.65	2.33	18.60	34.88	11.63	11.63	16.28			

Questions related to Family, Home Environment and Technology Support are presented in Table 2.3. The majority of participants Somewhat Agree (37.21%, N=16; SD 1.64) and Agree (23.26%, N=10, SD 1.64) with the statement, *my students and/or their families have the tools/technology needed*. Similarly, a majority of participants responded that they Agree (32.56%, N=14; SD 1.57) and Somewhat Agree (30.23%, N=13; SD 1.57) with the statement *families are provided adequate/effective follow up for work assigned at home*. Lastly, a majority of participants, 37.21%, Neither Agree nor Disagree with the statement *students/families have an appropriate space for their child to engage in remote learning activities* (N=16, SD 1.2).

Table 2.3

Descriptive Data Analysis of Closed-ended Response Questions: Family, Home Environment & Technology Support

	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree	**MEAN**	**SD**	**VAR**
	My students and/or their families have the tools and technology needed							**3.60**	**1.64**	**2.70**
N	2	10	16	0	7	6	2			
%	4.65	23.26	37.21	0.00	16.28	13.95	4.65			
	Families are provided adequate and effective follow-up for work assigned at home							**3.28**	**1.57**	**2.48**
N	2	14	13	7	2	1	4			
%	4.65	32.56	30.23	16.28	4.65	2.33	9.30			
	Student and families have an appropriate space for their child to engage in remote learning activities							**4.09**	**1.20**	**1.43**
N	1	2	10	16	7	7	0			
%	2.33	4.65	23.26	37.21	16.28	16.28	0.00			

Results from questions regarding Overall Teacher Satisfaction are presented in Table 2.4. 27.91% (N=27.91, SD 1.73) of participants responded that they Somewhat Agree with the statement, *overall, I feel competent providing remote learning opportunities to children with special needs.* 32.56% (N=14, SD1.9) Strongly Disagree with the statement, *I still gain the personal satisfaction that one may get from teaching and seeing learning happen in online teaching than I do in the classroom*. Finally, the majority of teacher participants (48.84, N=21; SD 1.15) Strongly Agree with the statement, *my day- to-day stressors have increased since moving to distance based teaching*.

Table 2.4

Descriptive Data Analysis of Closed-ended Response Questions: Overall Teacher Attitude and Experience

	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree	MEAN	SD	VAR
	Overall, I feel competent providing remote learning opportunities to children with special needs							**3.47**	**1.73**	**2.99**
N	5	9	12	5	5	4	3			
%	11.63	20.93	27.91	11.63	11.63	9.30	6.98			
	I still gain the personal satisfaction that one may get from teaching and seeing learning happen in Online teaching than I do in the classroom							**5.00**	**1.90**	**3.63**
N	3	2	6	4	8	6	14			
%	6.98	4.65	13.95	9.30	18.60	13.95	32.56			
	I am spending more time lesson planning/preparing lessons and materials when providing remote instruction that traditional in-person teaching							**1.81**	**1.21**	**1.45**
N	25	8	6	2	1	1	0			
%	58.14	18.60	13.95	4.65	2.33	2.33	0.00			
	My day-to-day stressors have increased since transitioning to remote teaching							**1.93**	**1.15**	**1.32**
N	21	11	6	3	2	0	0			
%	48.84	25.58	13.95	6.98	4.65	0.00	0.00			

Content Analysis from Open-Ended Questions

The open-ended questions used for the qualitative component are found in Table 3.0 below. Using these questions, a content analysis conducted revealed a more descriptive and deeper understanding of teachers' perspectives. The content analysis revealed five major themes and fourteen sub-categories, which are presented in Table 3.1. The prominent themes that emerged included: (1) Learning new technology; (2) Parental support for special education students; (3) Lack of engagement; (4) Stress; and, (5) Technology challenges.

Table 3.0

Content Analysis of Open-ended Response Questions: Major and Sub-Themes with Illustrative Quotes

LEARNING NEW TECHNOLOGY FOR DISTANCE LEARNING	
INDEPENDENT LEARNING	• *I learned on my own* • *Learned a lot as a teacher* • *Independently researching various sites* • *YouTube videos*
SOCIAL NATURE OF LEARNING	• *Friends helping friends*
PARENTAL SUPPORT FOR SPECIAL EDUCATION STUDENTS	
PARENTS WORK SCHEDULES	• *Families…are busy working from home* • *Difficulty balancing work and school* • *Difficulty balancing work and school* • *Many are working full time* • *Some parents are working and many don't speak English*
MEETING THE NEEDS OF SPECIAL EDUCATION CHILDREN	• *Working parents cannot supervise and assist their children with disabilities* • *They are being overwhelmed with so many service providers* • *They don't have the time*
COMMUNICATIONS	• *Parents are more difficult to get in touch with*
ENGAGEMENT	
ATTENTION	• *Poor attention* • *Difficult to maintain attention* • *Very distracted*
MOTIVATION	• *Lack of motivation* • *Student participation is low and or inconsistent*
CONNECTION	• *Students are more disconnected* • *I am not as engaged with kids as in the classroom* • *Difficult to engage*
PARTICIPATION	• *Can't get student to complete work* • *Children who engage in task avoidance behavior* • *Student participation is low and or inconsistent*
STRESS	
PARENTAL STRESS	• *Parents have confessed stress about home learning* • *Families attempting to teach content stresses everyone out* • *Strain on families*
STUDENT STRESS	• *This experience has been heartbreaking.* • *My students are struggling* • *My students are very upset and confused*
TEACHER STRESS	• *My emotional and mental state has taken the greatest impact*

	• *I feel isolated* • *Stress!* • *Stressful transition* • *The school day doesn't end I feel like I need to jump through hoops* • *Extremely stressed, lack of sleep* • *A great deal more stressful* • *Stress, much more preparation* • *The kids hate it, the parents hate it, the teachers hate it*
TECHNOLOGY	
LACK OF ADEQUATE TECHNOLOGY	• *Many families lack technology at home* • *No technology* • *They do not have enough technology… in order to fulfill the needs of distance learning* • *Lack of technology/accountability No printers, poor internet Limited computers at home*
LACK OF ADEQUATE TECHNOLOGICAL KNOWLEDGE	• *Students don't know enough about technology to problem solve* • *They do not have enough… background in technology in order to fulfill the needs of distance learning*

Theme 1: Learning New Technology for Virtual Learning

Many participants expressed the urgent need to learn more about technology in order to fulfill their new role as a teacher in a virtual learning format. The participants reported a lack of preparation for distance learning in their teacher education/graduate programs. For example, one participant noted that they were not adequately prepared for teaching in a distance education format from their formal, pre-service education training. However, they did report receiving support in the transition to distance learning from their respective schools and school districts. Although some teachers report to having been, and continue to be, provided with training opportunities, many of the teachers' comments revealed that they had to rely on independent learning or learning along with other teachers. Some of the common forms of training included: ZOOM© meetings, webinars, support through Google© Classroom, and Microsoft© Teams. A few teachers also reported receiving direct technical support. In general, teachers felt supported during this rapid transition to virtual learning during the COVID-19 pandemic which is characterized, in part, by teachers' attention to self-directed learning and a focus on increased engagement with colleagues.

Theme 2: Parental Support for Special Education Students

Teacher participants discussed the need for and challenges associated with parental support for special education services. The role of parents became of critical importance as students were relegated to receiving instruction while remaining in their home environment, which posed challenges to many families. Teacher participants indicated that parent's work schedules made it difficult for families to monitor the children's online learning. As parents worked full time, they reported having difficulty balancing their work schedules and the demands of virtual learning. Teachers contend that the lack of time parents had available to assist their child with learning

(e.g., completing assignments, online search, remaining on-task, attending to print, etc.), only exacerbated an already tenuous scenario for parents. Teacher participants identified some of the issues that became even more difficult for parents with the impeding COVID-19 crisis; They include, but not limited to: (a) Managing the schedules of multiple service providers, now virtually; (b) Addressing the specific learning needs of their child; and, (c) Using the English language to read directions and complete assignments, in the case of a bilingual students with a disability and/or a parent who lacks the English proficiency necessary for successful completion of the task.

Theme 3: Lack of Engagement

Many study participants reported a lack of engagement on the part of the students in the distance learning format. As the presence of engagement is of critical importance for learning to occur, many participants expressed a deep concern. Teachers specifically reported decreasing levels of attention, motivation, and participation of their students, resulting in a loss of a feeling of connection between the teacher and their students. Teacher's reported behavioral concerns, specifically with distractibility, poor attendance and lack of active participation and low motivation. Lack of family support and involvement was reported, as well as few opportunities for students to participate in social interactions.

Theme 4: Stress and Emotional Responses

Participants reported high levels of stress as a result of the sudden onset of virtual learning. This stress was noted as affecting not only teachers, but parents and students as well. Teachers reported observing the strain virtual learning created for families, especially as it relates to the ability to provide support for the learning of a student with disabilities. Teachers also noted that students felt upset and confused which further complicated the continuation of their services and education in a distance learning model. Teachers also reported multiple facets of the impact of distance learning and the stress it created in their professional lives. Some reported feelings of isolation, as well as, the stress created from an increase in the time required to prepare for distance learning for students with disabilities. One participant reported working much harder and spending significantly longer hours preparing for individual lessons and the school day. Several participants also noted that they do not feel personally satisfied teaching online. Further, one participant expressed an overwhelming feeling that there is little to no benefit for special education students learning using a virtual learning education model.

Theme 5: Technology Challenges

The final theme that emerged from the content analysis deals with the challenge of technology. Many teachers reported the problem of students not possessing adequate technology to meet the needs of virtual learning in their home. Participants reported that students lack necessary equipment such as printers or reliable internet service. In addition, students and families often did not command sufficient knowledge or experience with the technology that was necessary to successfully engage in a distance learning format.

Discussion

Current Findings

A mixed methods approach to better understanding special education teacher's preparedness, perceptions, and attitudes toward virtual learning yielded several findings. By utilizing both quantitative and qualitative methods of inquiry, the results provide insight into the following research questions, presented in the current study:

To what extent do special education teachers feel supported by other faculty and administration in the transition to remote learning?

In our examination of how special education teachers judged the level of support provided by their current employer, the teachers generally felt supported when asked to quarantine by their respective departments and/or instructional leaders. Additionally, teachers for the most part felt they were provided with training opportunities at their current job. The resulting data may be due in-part to the fact that there is growing agreement among school leaders and the professional literature in that the skillset and teacher competencies required for online teaching and the monitoring of student learning are vastly different (Dipietro et al., 2008; Fernandez et al., 2016; Nelson & Murakami, 2020). Stevenson, et al., (2015), substantiate this by claiming that teachers benefit when leaders subscribe to the following notion. That is, "the importance of supporting professional learning through multiple device platforms, online networks and opportunities to play, and experiment with technology" (p.173). A second possible reason for the proactive response on the part of administrators suggests that school districts and superintendents were, undoubtedly, provided written directions and guidelines as to how to work with their respective staffs and ensure they continue to meet the needs of students (Nelson & Murakami, 2020). Despite the findings that indicate that teachers felt supported by faculty, content analysis from opened ended responses indicated that teachers did a significant amount of independent learning, working to teach themselves new technologies to use in the classroom. Participants also reported working within friend networks to learn new technology together. We speculate that high agreement on rating scale items paired with these responses to open-ended questions indicate that teachers prepared for virtual learning with both the support of administration, as well as, learning on their own.

Lastly, the results and conclusions drawn from the study which are related to receiving and offering support, are in harmony with the normal function of most teachers. They reflect the professional lives of teachers, in that teachers are: (a) Naturally, or by professional training, accustomed to providing another person support, particularly with it comes to learning something; (b) Often times working in Teams to provide instruction and remediation and assume responsibility for all students using group dynamics; (c) Provided opportunities for professional development in groups settings; with follow-up sessions often done by grade or discipline; and, (d) Have proven to be resourceful in achieving a necessary goal. Usually, in obtaining materials and experience for their students; in this case, engaging in independent learning so they may be as best prepared to meet the instructional needs of their students.

What are special education teachers' readiness to implement distance learning during the COVID-19 pandemic, based on their training and experience?

The statements related to teachers' pre-service training probed the extent to which practitioners felt prepared and ready to teach in an online platform. Many reported feeling that their teacher education programs, as well as, their previous teacher experiences did not prepare them for teaching their students in a virtual learning setting. Many disagreed with statements which asked if their past experience for graduate training helped to prepare them for virtual teaching. This conclusion is in direct line with what is revealed in the professional literature (Birch & Lewis, 2020; Fernandez et al., 2014; Nelson & Murakami, 2020). Irvine et al. (2003) were among the earliest to call attention to the fact that pre-service teacher preparation programs do not prepare teachers for online teaching and that K-12 programs should move to change that dynamic. Archambault and Kennedy (2014) continued their work and have strongly recommended that higher institutions look to develop a closer alignment between the teacher education programs and practicum experiences prospective teachers are offered. Teachers also noted difficulties with student engagement based on content analysis of open-ended questions. While this finding is discussed in greater detail below, it is worth mentioning that in addition to lack of experience with virtual teaching, our participant sample was also skewed toward new teachers, as noted in the findings related to participants. In addition. To adjusting to teaching as a profession in the early phase of their career, young teachers have been taxed with managing a pandemic with limited. Finally, they also realized that part of their new reality consists of learning new ways to manage misbehavior productively (e.g., Outbursts; off-task; group dynamics, etc.) and that it will be a monumental task.

It is abundantly clear that pre-service, formal teacher-training programs must undergo complete introspective look at the current program offerings and competencies. The question of whether course titles and objectives need to be replaced or teacher competencies re-thought is best to begin at the faulty meeting conference table. Could a student teaching component be virtual or even include internship at the to-be established *Virtual Homework Hotline*. While some may view these programmatic changes as drastic, it is may be more important to consider that the limited information we have at this time, most believe that learning has been a challenge for most student, especially those with special needs. In turn, the art of teaching is nothing without the act and evidence of learning. The new reality of virtual learning has drastically changed the dynamics of both sides of the coin and, as such, the impact on college and university programs has got to be realized and acted upon.

To what extent do special education teachers feel that they are still promoting positive outcomes?

In the study, the results related to how special education teachers judged the extent to which they felt competent in promoting learning for their special education students, almost half of participants (N=20) believed they continue to promote learning among their special needs students. However, the nature of this question lends itself to a degree of bias for two reasons. First, consider that it is unlikely that most teachers would admit that they were not effective with their students. Second, since the change in practice was immediate, it is reasonable to assume that the they did not have an opportunity to consider how assessments, modifications and accommodations would be presented using an online platform. As the researchers considered the latter point, a direct and logical connection

to the statement which probes teachers about their ability to monitor student progress and learning was noted. Almost 70% of participants (N=30) suggest that this is a challenging endeavor. As one considers how to elucidate teachers and provide solutions to responsibly and accurately monitor IEP and overall student progress, one should consider the recommendations as presented by Smith et al., (2016). Specifically provide time and guidance to: (a) Discuss legal issues (e.g., IEP development/monitoring, general paperwork; (b) Create and implement online assessments; (c) Create assessments that are statistically valid for the online environment; (d) Align online curriculum to content standards; (e) Modify assessments based on student learning data; and, (f) Arrange materials to promote learning.

Approximately 25% of participants (N=11; 26.64%) agreed with Marteney and Bernadowski (2016) in that there are some positive effects of online instruction for students with special needs. A possible explanation for the low degree of agreement between both studies could be that in the Marteney and Bernadowski (2016) study the students participated with self-paced instruction, and most importantly, the teacher participants were not forced to change teaching practice overnight. On the flip side, a majority, however, did not agree with them (N=32; 74.42%). It cannot be overstated that the power of time allocation for adequate preparation is a commodity that probably weighed heavily on how the teachers responded to this statement.

From the teacher's perspective, do families have the technology and resources are available for remote instruction?

The statement probing teachers' knowledge as to whether students had adequate space for remote learning, teacher participant responses were evenly spread over six of the ratings; suggesting a high degree of subjectivity. Responses were divided as follows: Strongly Agree/Agree/Somewhat Agree (N=13; 30.24%), Neither Agree/nor Disagree (N=16; 37.21%) and Somewhat Disagree/Disagree (N=14; 32.56%). Results from the content analysis yielded challenges with technology as a major theme. In particular, they noted that families don't have the technology needed for virtual learning. In similar research, Burdette and Greer (2014) noted that 19% of parents of high school students expressed challenges with knowing how to accommodate for their child's disability in an online format. However, parents of K-8 students (29%) reported greater difficulty. Lastly, while Burdette and Greer (2014) found that 25% of both K-8 and high school families had limited knowledge as to *how* to use technology at home, most reported they had access to technology (89 and 95%, respectively). On a sadder note, teachers in the present study reported that one third of student households (N=13; 30.33%) did not have the appropriate tools and technology needed.

As stated earlier in the paper, an investigation with a specific focus on parent and virtual learning would be elucidating. While the informants in the present study provided valuable information about the parent and families, they work with their nothing more instructive than hearing directly from the source; in this case parents of children in school. A distinction between the experiences of urban, suburban an rural families would serve as a comprehensive and representative pool.

What are special education teachers' overall attitudes and experiences toward remote learning with respect to their stressors, satisfaction, and challenges?

In general, these data suggest that teachers feel supported by administration and faculty. They have engaged in independent learning to learn new platforms for teaching, and some

teachers feel as though they continue to support positive learning outcomes. Despite these positive findings, most participants reported feeling significant emotional strain including stress, students and families who are struggling, and challenges accessing technology. Most notably, teachers have reported stress, isolation, and physical symptoms, such as, lack of sleep. Overall, teachers reported having felt underprepared for virtual teaching, which likely could have mediated their stress.

Strengths, Limitations, and Future Research

The current study presents a mixed methods investigation for understanding special education teachers' preparedness based on their support, experience, and interactions with families for virtual learning. The study provides several interesting findings. Most notably, although special education teachers feel supported by their administration, they engage in a high level of independent learning. Overall the teaching processes become significantly more stressful for them, they are spending more time preparing, and the family that they work with encounter barriers to accessing virtual learning such as technology problems. These data provide valuable information for education professionals across settings. In particular, both undergraduate and graduate programs that prepare educators should use this information to help them better prepare their formal training programs so that teachers will be better equipped for virtual learning in the future. The mixed methods approach this study employed should also be considered a strength as it allowed researchers to gather a multitude of information across different topic areas to better understand the experience of teachers in the wake of the COVID-19 pandemic. The above noted findings may provide valuable feedback for administrators, teachers, and higher education professionals alike. The use of an online data collection system, particularly in response to the pandemic, should also be considered an area of strength for this study which involves a mobile and user-friendly Interface that made data collection quick and simple for participants. The measures designed particularly for this study appeared to yield important findings.

A relative strength revealed by this study is the documented evidence of the perseverance and dedication of the teacher participants. One can assume that, if provided with timely, appropriate, and relevant training, special educations teachers can and would provide distance learning that meets the needs of their students. Furthermore, this study provides insight into possible directions for future research and areas of development for both pre- and in-service teachers.

Despite the strengths of this study, it should be considered in the context of several limitations. First, although online data collection is a notable strength of this study, it also reveals certain limitations with respect to data collection. In particular, open ended response questions were utilized and researchers were not able to ask follow-up questions to responses that might be typically conducted during interview formats. Future research that allows for an interview format that enabled researchers to ask more specific questions and follow-up questions may provided deeper insight into the participants experience providing virtual learning. In order to control for broad environmental factors, the participant sample was limited to the Long Island area. This geographic limitation, while helping to control for such variables, also provides a limited sample with respect to the teaching and learning means of the participants and their students. Moreover, the sample size is somewhat small. That said, there appears to be sufficient power to extrapolate data from rating scale questions, and sample size is less of a consideration with respect to content analysis and researchers felt as though the responses provided appropriate levels of satiation for the content that was analyzed. Still, an analysis and investigation with a much larger sample size using the same, similar or questions with additional piloted items developed to supplement existing questions, could be of valuable and provide greater perspective on this topic with many variables that can be considered.

Conclusion

The support teachers received at the onset of distance learning, while immediate, needs to transcend a simple "how-to" delivery method of instruction and explore methods of engaging students in meaningful ways that promote learning, particularly for students in special education settings. Many teachers have demonstrated that they will dedicate themselves to the work of supporting their students. It would be a worthwhile endeavor to give them the tools necessary to succeed.

Based on our findings, we can see the relevance of effective and timely teacher training opportunities for both pre- and in-service teachers. When provided with training, even under difficult and unexpected circumstances, teachers in this study demonstrated their commitment to persevering through the implementation of a distance learning platform with their special education students. It is especially important to transcend initial phases of training and explore ways to increase levels of engagement through opportunities for professional development in distance learning. Future studies are warranted to address this issue for both pre- and in-service teachers.

This study reveals both the challenges and struggles of special education teachers and their students but perhaps more importantly, it uncovers the fortitude and perseverance of teachers determined to provide the education and services their students require. Teachers' reports of their tireless efforts working to provide a kind of instruction for which they were not prepared demonstrates the extent to which these teachers will go to serve their students. It also is an indication of the need for more effective and comprehensive professional development for both pre- and in-service teachers.

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