Staff Coaching and Adapting Preschool Curriculum for Students with Complex Communication Needs

by

Christina Royster

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved October 2020 by the
Graduate Supervisory Committee:

Leigh Graves Wolf, Chair
Andrea Zellner
April Boozer

ARIZONA STATE UNIVERSITY

December 2020

ABSTRACT

The purpose of this action research study is to examine the effect of an innovation that includes staff coaching, curriculum adaptation, and researcher reflection on increasing staff effectiveness in supporting students with complex communication needs. This study included four participants (two special educators and two speech-language pathologists (SLPs) working in Preschool Special Education (PSE) classrooms within a public school district. The study was conducted while navigating a global pandemic and emergency remote learning. Through the use of curricular noticing and an approach inspired by a Technological Pedagogical and Content Knowledge Framework (TPACK) framework, an innovation of a staff coaching model combined with adapted curriculum resources was designed to support staff members using the Big Day for PreK curriculum. Analysis of the data indicates that supporting staff through staff coaching and adapted curriculum materials increased their use and own adaptation of the curriculum. In addition, providing a staff coach with the opportunity to document and reflect on experiences can increase use of curricula and coaching effectiveness.

DEDICATION

To faith

Faith has been a strong part of this journey and I would not have persisted through this experience without the strength of Christ and knowing there is a greater purpose to it all.

To my family

Thank you for continuous support throughout all of my academic and professional pursuits. Thank you for always supporting me and motivating me, even if to simply to one-up my Dad on a higher education degree.

To my SLP friends Courtney and Ana-Maria

For the inspiration to actually go back to school, for being sounding boards, and for having people who will always cheer you on. Can't wait for your turn!

To my Pitt family

I can't imagine life without you- Hail to Pitt!

To the students and families with special needs

You inspire me to want to create positive change

Finally, to my late brother, Curtis Royster III

Everything I have done and will do is for you.

ACKNOWLEDGEMENTS

First and foremost, I want to thank Dr. Leigh Graves Wolf. Your encouragement, wisdom, and patience throughout this process was truly a blessing and exactly what I needed to keep pushing through this. Also, I have appreciated your support for all of my professional endeavors outside of this program. A million thank yous is not enough!

I also wanted to thank the "original group B", despite barely remembering the origination. I would have missed many a deadline and not completed several tasks without you. It was also just great to bond (vent) even though I'm on the other side of the country. Can you believe we made it here?!

Thank you to my committee, Dr. Andrea Zellner and Dr. April Boozer, for your commitment to my work and for believing it makes a difference. I appreciate all of your guidance and for providing the perspectives needed to complete this. Thanks for sticking with me!

TABLE OF CONTENTS

Page

CHAPTER Page

CHAPTER Page

CHAPTER Page

APPENDIX Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

Chapter 1

INTRODUCTION AND PROBLEM OF PRACTICE

This dissertation research investigates the use of the Big Day for PreK curriculum (Houghton Mifflin Harcourt, 2019) within preschool special education classrooms in a suburban school district in Maryland. Because the Big Day for PreK curriculum is a requirement to use in all preschool classrooms in the district, both special education teachers and SLPs shape their instruction and intervention on the themes and resources provided by the curriculum. The subject of this dissertation is to examine how teachers and SLPs currently use Big Day for PreK and their experiences through the effects of an innovation experienced during emergency remote learning. The innovation includes a digital repository of resources for use with students and coaching on the use of technology, adaptation of curriculum materials, and instructional strategies. Chapter 1 shares the larger and local context in which this study was conducted as well as the background research that led to the creation and implementation of the innovation.

It is important to note that during the period of conducting this research, significant events occurred in the larger context, which in turn affected the local context. As this research study took place, the coronavirus (COVID-19) pandemic began to spread. Businesses, services, and schools were shut down all over the world to mitigate the spread of the virus by reducing human contact. All schools in Maryland were abruptly closed in mid-March 2020, right at the start of the data collection phase in this project. The context for this research quickly changed from face-to-face interactions

within PSE classrooms to a virtual environment of emergency remote learning. This will be addressed and discussed throughout the study.

Larger Context

There has been a long-standing debate about the need for curricula at the early childhood level. Some feel as though the curriculum, if there is one, should be broad and supportive of social and emotional development to advance overall well-being and school readiness (Darling-Churchill & Lippman, 2016). It should be self-paced and child-directed through play and activity. Many others approach from the perspective of the curriculum being a guide to ensuring that each area of child development is covered, having a common language and approach, and encouraging quality control standards (NCQTL, 2015; Workman & Ullrich, 2017). Because of these differing viewpoints, many countries have developed guidelines for early childhood programs.

The National Center for Quality Teaching and Learning's (NCQTL) Preschool Curriculum Consumer Report (NCQTL, 2015) suggests thirteen components of a quality curriculum. The report rates curricula in terms of their: 1) grounding in childhood development principles, 2) evidence-based, 3) effects on child outcomes, 4) comprehensiveness across learning domains, 5) depth in learning domains, 6) specific learning goals, 7) learning activities design, 8) responsive teaching, 9) individualized instruction supports, 10) cultural and linguistic responsiveness, 11) ongoing assessment, 12) professional development opportunities, and 12) family involvement (NCQTL, 2015). The benefits of a well-rounded curriculum include opportunities to learn language and literacy skills, progress in cognition and social-emotional maturity—especially for at-

risk communities—and building positive relationships. To achieve this, the curriculum should have a framework that simultaneously allows the flexibility to meet the needs of the community at hand. This involves consulting with educational stakeholders, interacting with the community leaders, and considering the expectations of various perspectives (IBE-UNESC, 2017). It is imperative that a nation evaluates these needs at the local community level to determine the need for a curriculum, and what curriculum would be the best fit.

There is not a one-size-fits-all for preschool programs in the US; however, there have been tools developed to evaluate quality programs. National accreditation is optional but still offers common standards to rate programs (Workman & Ullrich, 2017). Maryland EXCELS is an organization that offers information to childcare providers and rates childcare programs for families to make informed decisions (Maryland EXCELS, 2020). Maryland EXCELS developed an Environment Rating Scale, Environment Rating Scales Self-Assessments during COVD-19, Program Administration Scale, and Classroom Assessment Scoring System to rate various programs. The Classroom Assessment Scoring System assesses teacher-child interactions, routines, and relationships. Finally, the Preschool Curriculum Consumer Report is the most comprehensive list that describes the specifics of 17 widely-used programs with the aforementioned 13 components of evaluation (NCQTL, 2015). There is an obvious need for consistency and support in training with curricula.

Local Context

I work in the sixteenth largest school district in the nation, located in the suburbs of Washington, DC. The district contains a variety of special education programs including the Preschool Special Education (PSE). PSE is an umbrella of services ranging from minimal supports of speech therapy or behavior consultation delivered in private daycare settings to special education classrooms with teachers, related service providers (therapists and specialized teachers), paraeducators (aides), and consultants. There are students at each level with speech-language impairments, some who are considered nonverbal or are unintelligible (listeners are unable to understand their verbal speech).

The PSE program is hosted at 37 of the 134 elementary schools in my district (and one special school containing only students with special needs). Some schools have one PSE classroom, while others have as many as six classrooms with morning and afternoon classes. Students in PSE have a wide range of disabilities. Some students have complex medical needs and receive services from speech-language pathologists (SLPs), physical therapists, occupational therapists, vision specialists, and even private nursing on top of academic support. Other students have less intensive needs and are placed in PSE because they only need instructional support or behavioral structures, so these students may or may not participate in other therapies. Some PSE classrooms offer inclusion, where students in special education are mixed with typically-developing children in the same classroom. Other classrooms are self-contained and only include students with disabilities (Preschool Education Program, 2018).

The PSE program implemented a curriculum called Big Day for PreK—made by Scholastic and then sold to Houghton Mifflin Harcourt-—approximately eight years ago (Houghton Mifflin Harcourt, 2019). Big Day for PreK is a "curriculum in a box" that is available for purchase from Houghton Mifflin Harcourt. It has been developed by curriculum writers and underwent numerous research evaluations to ensure it met standards for early childhood learning. Big Day for PreK focuses on social-emotional development, integrated learning, partnership with families, language development, and responsive instruction (Houghton Mifflin Harcourt, 2019). This curriculum entails eight themes (Ready for School, Our Community, Awesome Animals!, Imagine It Make It, Growing Up Healthy, Nature All Around Us, Moving On), each with a social-emotional focus and knowledge focus. The curriculum is available for half-day and full-day programs (both of which PSE has) and is centered on Big Experiences. Big Experiences consist of whole group lessons with the entire class engaging in an activity, circle time, and storytime. An example of a whole group could be having the class act out different animals and how they move around. A circle time could be looking at different pictures of habitats and identifying which animal lives in the environments, matching pictures on an interactive whiteboard in the classroom. Storytime typically uses the curriculum-provided books which are related to the themes, engaging the children in discussion and describing the pictures in the book. Teachers and therapists closely follow the curriculum while using vocabulary targets, reading preselected books, and using shared Big Experience materials (Houghton Mifflin Harcourt, 2019). In reference to special education, The Big Day for PreK Research Foundation cites that the curriculum is

"accessible to all children" with scaffolded support, guided practice, and individualization suggestions (Scholastic, Inc., 2015). The Big Day for PreK Responsive Instruction pages contain modification suggestions for Big Experiences, along with follow-up activities.

The Augmentative and Alternative Communication (AAC) team in my district is a team of SLPs, special educators, occupational therapists, a physical therapist, and administrative support staff. The AAC team supports students with severe communication disabilities, collaborating with school teams and families with assistive technology. We have students throughout the entire district at the majority of schools (over 200 school sites). At some schools, have several students, and at other schools we might only have one student. The AAC team has students in special education classrooms, in typical general education classrooms, and even some who are in their homes (due to them being too young to start preschool or too medically-fragile to attend school). The AAC team provides training, consultations, materials, and equipment such as tablets or speech-generating devices to help children express themselves. Three years ago, I transitioned from being a school-based SLP to the AAC team. I now have a total of 16 schools on caseload that I visit. Of the 16 schools, nine contain PSE classrooms (and students) that I support.

As I visit PSE classrooms, not only have I noted a wide range of student abilities in the classrooms, but also a range of instructional practices. Some teachers and SLPs have core vocabulary boards in speech-generating devices, some with binders full of picture symbols they have made, and others relying mainly on materials they have taken

directly from the curriculum guide. I have visited students in classrooms who are nonverbal with severe cognitive impairments and the curriculum requires teachers to teach about habitats and environmental systems, while they would rather work on more functional skills such as requesting wants and needs or being able to describe pictures using augmentative and alternative communication (AAC). I have seen SLPs try to adapt units to fit the goals in students' Individualized Educational Program related to responding to 'who' and 'where' questions, but feeling as though they must choose between curriculum content and functional communication goals. I see school staff with a desire to meet the needs of students with complex communication needs, but they are unsure of how to actually make this happen with Big Day for PreK.

As I have developed in my role on the AAC team, I have become more interested in how Big Day for PreK is being used in PSE classrooms. I have worked with special educators, speech-language pathologists (SLPs), and other professionals who are using the curriculum with students and I have the opportunity to assist them in their implementation. My interest in further understanding how staff are currently using Big Day for PreK and how to support them has led me to investigate how to support students with severe needs and the staff educating them.

Problem of Practice and Research Questions

The problem of practice for this study is centered around preschool special education teachers (PSE) and speech-language pathologists (SLPs) in a school district in the suburbs of Washington DC. Prior cycles of action research point to the lack of resources available for use with PSE teachers and SLPs. They feel as though the Big Day

for PreK curriculum (Houghton Mifflin Harcourt, 2019) is not suitable for instructing students with severe communication impairments and using AAC. PSE teachers and SLPs must adapt materials without the sufficient guidance, training, and support necessary to do so. This study proposes an innovation that uses AAC strategies to adapt curriculum materials and provides individualized coaching which can be developed and utilized by PSE teachers and SLPs. The study investigates the following research questions:

RQ 1) How and to what extent does implementation of staff coaching and a website with a digital repository of resources ("Adapting Big Day for PreK for AAC") affect teachers' and SLPs' **use of** and **attitudes** toward adapting the Big Day for PreK curriculum for students with severe communication impairments?

RQ 2) How and to what extent does implementation of staff coaching and a digital repository of resources affect teachers' and SLPs' **actual adaptation** and **use of modified Big Day for PreK curriculum** for students with severe communication impairments?

RQ3) How and to what extent does implementation of staff coaching and a digital repository of resources affect the **researcher's approach** and **perspective** to AAC consulting?

Summary of Introduction

Through this chapter, I have shared the context in which my area of research has been developed and my role in this context I have discussed early childhood curricula, the Big Day for PreK curriculum used in my district, and specifically how it currently

functions in PSE classrooms with students who use augmentative and alternative communication (AAC). I identified the questions guiding the research.

Although Big Day for PreK (Houghton Mifflin Harcourt, 2019) is a well-researched curriculum with evidence supporting its effectiveness with students and AAC is an effective tool for language-delayed preschoolers, PSE teachers and SLPs in my district continue to need support in using the curriculum. PSE teachers and SLPs working in PSE classrooms have the desire to build capacity and to grow professionally. They currently face barriers in being able to use Big Day for PreK with students who have significant communication challenges. Through my dissertation cycle of action research, I studied the use of an innovation which has been guided by AAC strategies, coaching, and TPACK (Mishra & Koehler, 2006). With systematic innovation, I hoped to support these professionals in their work with students.

Chapter 2

RELATED LITERATURE, THEORETICAL PERSPECTIVES, AND RESEARCH GUIDING THE PROJECT

Chapter 1 described the context of this action research project through the global, national, and local environment along with my role in the research, the problem of practice, and research questions. In this chapter, research and related literature are presented to develop a framework for discussing the theoretical context of this project. I will begin with an overview of the field of augmentative and alternative communication (AAC) and the concept of core vocabulary. Next, I will share an overview of teacher professional development and instructional coaching along with research on curriculum adaptation. Then I will present the Curricular Noticing Framework (Dietiker, Males, Amador, & Earnest, 2018) and Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006), and their relevance to my intervention. I will also share the previous cycles of action research that guide my study.

Augmentative and Alternative Communication (AAC) and Core Vocabulary

The field of AAC is an umbrella of approaches to support individuals with complex communication needs. These individuals encounter challenges in expressing themselves to family members, peers, teachers, and people in the community **(**Beukelman & Mirenda, 2013**;** Barker, Akaba, Brady, & Theimann-Bourque, 2013). AAC is comprised of non-aided supports such as symbolic gesturing (e.g., demonstrating an action, pointing, etc.), facial expressions, or sign language. Aided approaches are speech-generating devices (SGDs), picture exchange, or the use of a computerized system

(ASHA, 2018; Barker et al., 2013). AAC is used as a tool to communicate in the environment and engage in interactions with others.

AAC is widely utilized in preschool classrooms, especially in special education. While AAC was formerly considered a "last resort" for students with intellectual disabilities, it is now seen as customary and essential within early intervention for students with complex communication needs (Romski, Sevcik, Barton-Julsey, & Whitmore, 2015). Teachers and therapists use AAC intervention within instruction to help children express thoughts and ideas, request, respond to questions, initiate, describe, comment, label, and more. AAC is not only used for expressive language but also to help with students' understanding of oral language. AAC strategies involve modeling using the AAC user's communication system, creating multiple opportunities for practice, and providing wait time for a student to initiate or respond (Romski et al., 2015).

The AAC community began to explore using core vocabulary in the late 1950s and 1960s while interviewing individuals with intellectual disabilities living in hospital environments (Mein & O'Connor, 1960 as cited in Tilborg & Deckers, 2016). Researchers identified a list of 218 words that were used by over 50% of the participants. Since then, additional research has looked at individuals of all ages such as toddlers (Balandin & Iacono, 1999; Banajee, Dicarlo, & Buras Stricklin, 2003), preschool children, school-aged children, adults, and the elderly (Robillard, Mayer-Crittenden, Minor-Corriveau, & Belanger, 2014; Stuart, Beukelman, & King, 1997; Trembath, Balandin & Togher, 2007 as cited in Tilborg & Deckers, 2016). All of these studies

sought to determine the words that were most important to understand and use. There have also been studies on populations of individuals who speak English as a Second Language, with Autism Spectrum Disorders, and with physical disabilities (Boenisch, 2009; Boenisch and Sachse, 2007; Boenish & Soto, 2015; Chen et al., 2011 as cited in Tilborg & Deckers, 2016). From these studies and countless others, lists of core vocabulary were established.

Core words are high-frequency words that are versatile and salient throughout different environments (Tilborg & Deckers, 2016, p. 127). The list can range from 200 to 400 words that account for approximately 80% of what is said. Core vocabulary consists of mainly functional words such as verbs, adjectives, pronouns, prepositions, and conjunctions rather than nouns (p. 127), which are typically defined as fringe vocabulary. Fringe is still useful, especially nouns such as family members, classmates, favorite toys, and favorite foods, but the overarching idea is that educators should support the learning of words that are going to yield more communication opportunities for an individual who is language-delayed or language-impaired.

Related Research

Numerous studies have explored core words at the preschool vocabulary level. Banajee, Dicarlo, & Buras Stricklin (2003) studied 50 two to three-year-olds in various preschools and found that all of the preschoolers used the same nine words across routines, and none were nouns. The study recommended additional research on toddlers with communication delays and with those using AAC. Trembath, Balandin, & Togher (2007) examined children ages 3 to 5, while they participated in preschool

activities. They found that core words accounted for almost 80% of the words spoken across activities. Additionally, Fallon, Light, & Page (2001) found that preschool children ages 3 years, 9 months to 4 years, 9 months used 25 core words that made up 44% of their spoken language.

While many studies have established the use of core vocabulary amongst preschoolers, there have also been researchers examining how to teach core vocabulary. Zangari & Soto (2011) used a case study for preschool vocabulary instruction, in which they used repetitive exposure of core words through books (read each book for two weeks), focusing on 4-6 words per book. The researchers used a program called Teaching Early Language and Literacy through Multimodal Expression (TELL ME), which is an instructional program for early AAC users. TELL ME uses shared reading and writing lessons with predictable structures, classroom routines (snack, outdoor play), and centers in the classroom to target core vocabulary. Zangari & Soto (2011) report that they orientated and familiarized both staff and parents to core vocabulary, ensured that each child in the classroom had an AAC system with core vocabulary, provided frequent practice, and increased family involvement.

Relevance to My Study

In my school district, the AAC team started adopting principles of core language in the last decade, and the strategies have gained significant traction in recent years as core vocabulary resources have become more plentiful and popular. Previously, the AAC staff attended training and workshops, but they did not have a systematic way to incorporate core vocabulary techniques into consultations at schools. The AAC team

teaches a professional development course for staff across the county, which includes a unit on core language. During the 2012-2013 school year, my first year working as a speech-language pathologist (SLP) and being the beneficiary of the AAC team's support, a member of the team developed an interactive core vocabulary board to use on the interactive whiteboard. I used this often with both students in elementary school and preschool. During the 2015-2016 school year, the AAC team collaborated on the Core Language Project, which included a set of standard materials that were stored in a central electronic location. The set of materials includes inserts to program communication devices, communication boards/books with picture symbols, and the interactive whiteboard activities. The site also includes resources for training, research, and video examples on how to implement core vocabulary, and sample activities to target core words during academic and home activities. AAC team members add materials to the Core Language Project as they see fit, so it is a consistently growing database (InterACT, 2019). Even with this database, teachers and SLPs working in PSE classrooms do not have AAC resources specifically tailored to Big Day for PreK. They also do not always have background training in using AAC or even working with students who have complex communication needs.

Educator Professional Development & Coaching

Professional development and coaching are both important to educators delivering the preschool curriculum to students. Yoshikawa et al. (2013) compared several previous works that advocated for bi-weekly coaching from expert teachers through face-to-face meetings or online/video observations. They concluded that pre-service training in higher

education should involve practical, in-class experiences, web-based training, and specific training in educating children with disabilities (p. 8). The authors also stated the need for more evidence about the effectiveness of curricula that do not provide follow-up or extensive support from the developer, to see if they can be effective for students (p. 8).

Related Research

Akalin, Demur, Sucuoğlu, Bakkaloğlu, H., & İşcen, F. (2014) looked at training through the lens of including special education students in typical preschool classrooms. They stated that "teachers indicate that they are in need of training, support from special education teachers, and additional materials and tools…" (p. 41). Preschool teachers do not feel that they have the skills that may be necessary to instruct students with special needs (p. 42). Educators want to know how to adapt the curriculum for daily routines and how to keep students engaged. Preschool teachers requested workshops, natural experiences, seminars, in-service training, and coursework to gain more understanding, and they also wanted "on-the-job" experience in the classroom (p. 41). One-time training during in-service is insufficient; they want monitoring and feedback to ensure application of acquired knowledge (Bruns & Mogharberran, 2009; Crane-Mitchell & Hadge, 2007; Hundert, 2007; Schepis, Reid, Ownbey, & Parsons, 2001; Yang & Rusli, 2012 as cited in Akalin et al., 2014).

Fields (2015) explored barriers in the implementation of AAC among SLPs. A major area revealed is the absence of undergraduate and graduate coursework, as 38% of SLP programs did not offer a class in AAC. SLPs were left feeling inadequate and incompetent in working with individuals, including preschool students, using

AAC. There is a clear relationship between the lack of training and experiences using AAC of preschool teachers and SLPs, and the attitudes and feelings towards implementing AAC strategies in instructional practices.

Sennott, Crest, Fogarty, & Hix-Small (2017) studied the effects of teacher coaching and modeling of AAC for children with complex communication needs in an urban early childhood setting. Researchers instructed teachers with the MODELER AAC intervention, which includes modeling, encouragement, child's communication, and response. The initial 90-minute training consisted of developing background knowledge, discussing the use of MODELER within the school's curriculum, model MODELER for the curriculum, memorize MODELER strategies, support MODELER, and independent use of MODELER in the classroom. Teachers rated their performance during the modeling phase and they also were provided feedback from the coach (investigator). The teachers implemented MODELER within randomized reading sessions and play sessions in the classroom. Researchers specifically observed the teachers' use of an AAC device with MODELER strategies, as they spoke using one or more AAC picture symbols. The study examined three teacher/student pairs and collected data on strategies used and compared to baseline data prior to MODELER training. This was done using audiovisual recording followed by coding and a second-rater scoring 20% of the videos. The results of this study demonstrated that there was an increase in AAC modeling during the coach-led phase and teacher-led phase of the intervention for all three teachers. In addition, the modeling gains were consistent during the independent post-intervention phase (Sennott, Crest, Fogarty, & Hix-Small, 2017).

O'Keefe (2017) studied coaching in early childhood education (ECE) programs. The report highlights various coaching models such as MyTeachingPartner, a hybrid model of video-based and online coaching with a remote coach providing feedback. It includes the Pyramid Model, an approach involving weekly coaching with modeling practices for social competence and challenging behaviors in young children. Practice-Based Coaching is a government-developed coaching framework with three parts (planning, observation, reflection on feedback). Through interviews with different programs using coaching models and reviewing the approach used, O'Keefe was able to provide "lessons learned" about the benefits of the different models and recommendations for utilizing the particular models. The report concluded that coaching in EDE programs is a beneficial strategy with positive impacts on the students, professionals, leadership, and the organizations in which they take place. Researchers also note that too few ECE programs have the resources and capacity to implement the systematic change necessary to improve (O'Keefe, 2017).

Kent-Walsh & McNaughton (2005) developed an eight-step training model for the instruction of communication partners. In doing this, they noted previous research describing the fault of single-session in-service training, as only 10% of participants implement training strategies and how speech-language pathologists [and teachers] need to be active learners in training (Showers & Joyce, 1996; Darling-Hammond, 1995). The protocol Kent-Walsh & McNaughton (2005) used included pretest and commitment to the instructional program, strategy description, strategy demonstration, verbal practice of strategy, controlled practice with feedback, advanced practice with feedback, post-test,

commitment of long-term use of strategy, and generalization of strategy. Kent-Walsh & McNaughton (2005) emphasized the importance of oral or written commitments from participants in the training program, continuous practice, and feedback. Senner & Baud (2016) implemented this protocol in a classroom for students with special needs; two students in this classroom used AAC devices. All staff were observed to have increased use of target strategies except for one. Also, researchers observed signs that staff were starting to generalize strategies beyond the training program. Staff reported positive changes in their instructional behaviors, increased familiarity with students' devices, and they benefited from the feedback provided. The negative quality of the training program was the presence of too many people in the classroom at times (Senner & Baud, 2016).

Relevance to My Study

Based on the previous studies related to staff confidence, competency, and training, it is clear that staff require several supports in order to be effective educators. If staff have not developed an understanding of how to support students with language delays, they may not be confident in working in classrooms such as PSE classes. If staff members do not have the resources and the opportunity to learn how to use the resources, they may not use the resources or feel overwhelmed in trying to create their own. If staff are not provided training and feedback on their instruction, it is possible that they feel less confident in what they are doing or use resources incorrectly.

Direct training and coaching provide an opportunity for staff to meet individual needs and grow professionally. PSE staff in my district can benefit from coaching because it can allow them to:

a) Gain familiarity with AAC supports and strategies: PSE staff can learn how to create materials for students who need an alternate form of communication, how to program devices, how to implement a core vocabulary approach, how to adapt existing AAC supports to students, and strategies such as modeling, multiple opportunities for practice, and wait time (Romski et al., 2015).

b) Increase understanding of the Big Day for PreK curriculum (Houghton Mifflin Harcourt, 2019): Coaching can target deeper understanding of the adaptations that are already provided in the Big Day for PreK guide for educators, how to locate resources available online for the curriculum, and how to collaborate with others using Big Day for PreK.

c) Set goals related to personal professional development and/or student needs: PSE staff can use coaching to identify their own needs as a teacher or SLP and seek support related to this specific area. While there are opportunities to learn in group professional development sessions hosted by the PSE or SLP department or Speech and Language Services, these settings do not typically offer the time, comfort, and "on-time" support that coaching can provide.

Curriculum Adaptation and the Curricular Noticing Framework

The Big Day for PreK curriculum is said to be "accessible to all children" when provided scaffolded support, individualization, and guided practice (Scholastic, Inc., 2015). In the curriculum guidebook, there are Instruction pages for users to follow for

lesson plans. The authors included adaptation and modification suggestions during the Big Experiences portion of the day (Scholastic, Inc., 2015). While this information is promising and demonstrates a commitment to providing ideas for children requiring additional support, there is a need for additional research that is not sponsored by the curriculum developers and supplementary ideas for students with severe communication needs (Alexander and Block, 2011).

Related Research

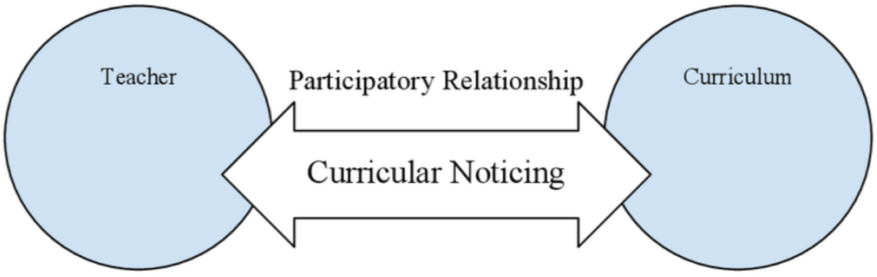
Alston & Kilham (2004) studied two children with special needs in early childhood settings. One child was in a mainstream classroom and the other student was in a small group setting with students on the autism spectrum. Researchers recorded adaptations made on the environment, instructional materials, diagnostic testing, differentiation, monitoring/diagnosing, interaction, rules/procedures, support services or resources, and record keeping. They examined instructional adaptations in terms of teacher questioning, explaining, prompting, or modeling. Finally, Alston & Kilham (2004) recorded adaptations based on motivation (praise, expectations of success) and self-responsibility. The study observed student teaching assistants in the two settings, noting performance and adaptation when observing a special education teacher (and not) as well as when the teaching assistant planned with a special education teacher (or not). Using diaries, transcripts of informal interviews, and lesson plans with adaptations documented, Alston & Kilham (2004) concluded that student teaching assistants did not always use inclusive practices in the mainstream setting. More importantly, the teaching assistants did not use accommodations or adaptations in mainstream or specialized

classrooms. The researchers suggested that educators-in-training could benefit from training and planning time to increase the use of adaptations.

The Curricular Noticing Framework (Dietiker, Males, Amador, & Earnest, 2018) is centered on the idea of "participation with curricular materials, [understanding] their affordances and limitations, and [using] strategies to act" (p. 521). This framework describes the required skills of attending, interpreting, and responding during the decision-making process of instruction, the authors explain "curricular noticing" in terms of a relationship of participation between the educator and curriculum materials, as represented in Figure 1. Curricular noticing also takes into account the educators' knowledge of students, prior experiences, and personal beliefs in the participatory process. Educators must make decisions and be selective in how they attend to materials, as they will not have time to go through all curriculum materials. They also must take the time to make sense of what materials are used based on background knowledge and experiences. Finally, educators need to decide how to react or to respond based on student abilities and the educator's own capabilities.

Figure 1

Curricular Noticing Framework



We cannot simply assume that all adaptations are the same and focus on the outcomes of the adaptations. Taylor (2012) notes that, although there has been long-standing research in curriculum adaptation, "…we know the least about when, how, and how much teachers *adapt* textbook curricula" (para. 9). Educators adapt curriculum materials for different reasons, in different ways, and at different times. These differences lead to diverse effects on student performance, so we should account for the multiple effects by incorporating various perspectives of adaptation in research. Furthermore, during the interviews conducted in both Cycles 0 and 1, not a single teacher or staff noted using the Adapted Instruction pages of Big Day for PreK. This indicates a need for alternative ways to adapt and modify Big Day for PreK to meet the needs of PSE students.

Relevance to My Study

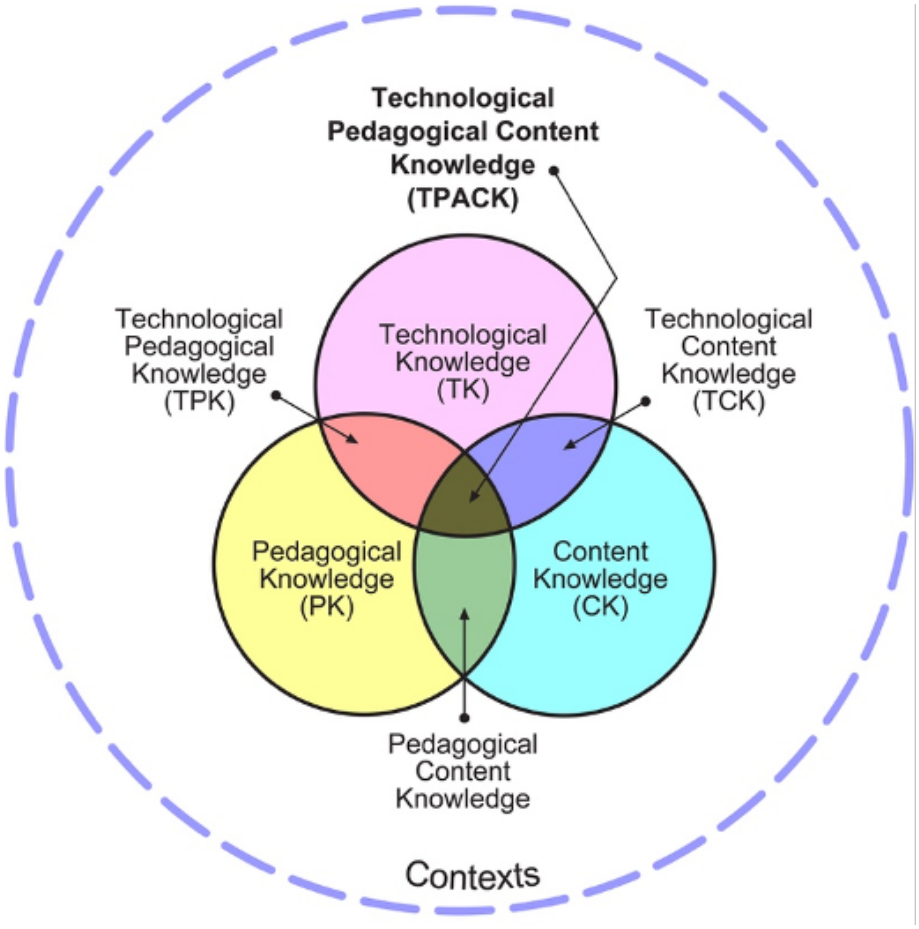
The idea of instruction and consulting not being unilateral is what led to the change from Cycle 1 to the current project. I began to question how I could establish the value and effectiveness of my own adapted resources. Why would my materials be "better" than what another SLP or teacher created? I considered how different adaptation styles could be beneficial to different educators, and the support should not be limited to one person's approach. Once the SLP participant in Cycle 1 shared the interactive whiteboard activity that I later distributed to the others, I elected to gather additional curriculum materials from outside sources. Instead of only distributing materials I have created and adapted, the materials should come from many users of Big Day for PreK. The idea of a collection, or repository of resources, emerged.

Technological Pedagogical Content Knowledge (TPACK) Framework

Mishra & Koehler (2006) developed a framework that focuses on technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) to address the situation of implementing educational technology in instruction. TK describes an educator's ability to use the technologies, tools, and resources. PK is the knowledge of procedures, practices, and methods within learning and instruction; this targets the values and purpose of education. CK refers to the teacher's understanding of the subject matter at hand, including concepts, theories, and approaches. These areas overlap into Technological Content Knowledge (TCK), Pedagogical Content Knowledge (PCK), and Technological Pedagogical Knowledge (TPK). Through the Technological Pedagogical Content Knowledge (TPACK) model (Mishra & Koehler, 2006), educators consider the use of technology tools that are most effective in instructing and guiding students toward an understanding of the material. The authors describe these tools as including hardware, software, and applications, which are the majority of tools used in AAC. For educators to use this framework, they must be open to the idea that curriculum content can be represented through technology and that pedagogical techniques can be used to deliver content through technology. An educator should understand that students come from different backgrounds and needs, so technology helps to bridge the gap. Finally, a teacher using TPACK should agree that educational technology can be utilized to enhance a student's prior knowledge and strengths (Kurt, 2018; Mishra & Koehler, 2006).

Figure 2

TPACK Framework



Related Research

Marino, Sameshima, & Beecher (2009) studied TPACK in the realm of assistive technology and teacher preparation. The researchers were interested in how TPACK promotes inclusive education and addresses the needs of students in special education settings. "Unfortunately, numerous significant barriers to the appropriate selection, adoption, implementation, and assessment of assistive technology exist for students with disabilities who receive the majority of their academic instruction in inclusive

classrooms". There is a limited number of professionals in school settings who are qualified to make decisions and provide training on assistive technology (Marino & Beecher, 2008) and, furthermore, there are few educators who have the skills to integrate assistive technology/AAC into instruction (McLaren, Bausch, & Jones Ault, 2007).

Cacho (2014) studied 47 graduating teachers in the Philippines prior to starting work in elementary education. In this study, researchers employed simple random sampling to select the sample, and then participants completed a self-report Likert scale questionnaire (Likert, 1932). The survey targeted university experience in TK, CK, PK, PCK, TCK, TPK, TPACK, and perception of their student-teacher mentor's modeling of TPACK. The respondents reported that professors from the university displayed high competence and model TPACK principles often, while mentor teachers have some competence and sometimes demonstrate TPACK during student teaching. While this study was conducted in a larger context with differing demographics and perhaps even different educational values, the data demonstrate that educators entering the workforce can benefit from additional training and modeling of TPACK when they get into their student teaching and mentoring settings. In addition, this study sheds light on some of the differences between the practice of TPACK at the university level versus in the context of an elementary school with additional confounding variables such as school socioeconomic status, administration, and resources (Cacho, 2014).

Tournaki & Lyublinskaya (2014) studied TPACK development with 100 preservice special education teachers instructing a math and science course. The researchers designed a *TPACK Levels Rubric* to assess lesson plans during a pre-

instruction and post-instruction period. They found that after course requirements were completed, participants' TPACK scores increased in each targeted component of TPACK and their overall scores. The researchers concluded that integrating and embedding technology into instruction is complex and lengthy. The authors also found that teachers can only accept the beginning of the process in such a short amount of time, which is teaching and learning with technology. To advance to additional levels such as integrating technology and envisioning new ideas with technology. With additional time, perhaps researchers could have seen TPACK results include later levels of growth.

Relevance to My Study

In building capacity for teachers and SLPs to adapt and use Big Day for PreK effectively, it is important for staff to understand principles of AAC, including core vocabulary (content knowledge), the delivery of the curriculum (pedagogical knowledge), and technologies used to deliver the curriculum (technological knowledge). As schools have become more inclusive over the years, and as more students with unique needs enter school systems, staff must be prepared to instruct them. In my school district, as well as in others, staff require technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) to be effective and feel effective. PSE staff should have TK in order to use communication devices, make visual supports for students (making pictures to enhance books, pictures to reinforce academic concepts, picture books used for communication, etc.), and to operate/program the devices in the classroom setting. Staff must know how to use the software systems that make the visual supports as well. PSE teachers and SLPs require PK to use instructional strategies that are

appropriate to students' needs. They should understand how various developmental delays can affect children's understanding of language and their expression, and how to help these students make academic progress at an appropriate pace. Finally, PSE staff need CK to understand Big Day for PreK's mission, the purpose behind activities, and what information the curriculum entails. Teachers and SLPs should know how to select curriculum books that will engage their students and how to modify the Big Day for PreK materials to make it accessible for the students in their individual classrooms.

In terms of professional development and how my role on the AAC supports TPACK (Mishra & Koehler, 2006), our team's purpose is to support the staff through training and consultations. We must be knowledgeable on how to incorporate best practices in AAC with the curriculum that is being used. It is part of my role to provide examples of adaptation for staff, to suggest communication supports that can help the student learn and communicate effectively, and to train staff in their creation and use of academic materials. During a consultation with an SLP, an AAC consultant might model the use of the interactive whiteboard core activity during a reading lesson, provide a list of activities in the school day and how the activities target core vocabulary, or modify a curriculum book to highlight the core language it contains. Through several discussions and preliminary interviews completed, teachers and SLPs expressed a range of understanding of core language as well as how to make the preschool curriculum "work" with AAC/core language. Training is a critical part of my role and I aim to build competency for staff, thus supporting students in the process.

Previous Cycles of Action Research

Before this proposal, two cycles of action research were conducted which informed the design and delivery of this study.

Cycle 0. Cycle 0 was conducted to develop an understanding of the context and the experiences of PreK and PSE staff. In Cycle 0, I conducted interviews with four staff members, two teachers, and two SLPs working with preschoolers. One of the teachers was a general education teacher - she does not work in the special education classrooms and her students have not been identified with special needs. The other teacher interviewed was a special education teacher working in a self-contained classroom, with all students being identified with a disability. The two SLPs interviewed are, by default, working with students with special needs. One SLP serves students in PSE, general education kindergarten through fifth graders, and special education students in kindergarten through fifth grade. The other SLP works with students in an autism preschool class, general education preschool, and kindergarten through fifth grade general education and special education students. I conducted 10 to 15-minute interviews with each staff member, asking them about their thoughts on Big Day for PreK and experience in using AAC. I identified keywords related to confidence, barriers, critiques, use of curriculum, and positive statements and used those keywords as codes. After coding the transcripts of the interviews, I was able to analyze the results and make general conclusions. Cycle 0 revealed that teachers and SLPs are confident in their abilities as staff members, although they identified areas in

which they could benefit from additional training/support. Barriers to using the curriculum include students' attention, time, amount of modification/adaptation, equipment, and lack of collaboration. Critiques of the curriculum related to the lack of strategies included in the user guide, complex material, and the amount of time to modify was also a theme that emerged from the interviews. The SLPs and one teacher did not follow the curriculum closely, and they used it as a framework rather than a set plan. The positive aspects of Big Day for PreK, as noted by staff, included the breakthrough moments that occur in using the curriculum and organization.

Cycle 1. During Cycle 1, I distributed pre-innovation questionnaires, implemented a trial innovation, and conducted post-intervention. I provided questionnaires to staff which included demographic questions and Likert scale questions related to confidence, attitudes, and experiences related to Big Day for PreK and augmentative and alternative communication (AAC) (Likert, 1932). The questionnaires were distributed via Google Forms to two SLPs and two special education teachers working in PSE. Three responded (two PSE teachers and one SLP), so they were the participants in Cycle 1. I adapted two books used in the curriculum by creating picture symbols representing the concepts "same"/"different" and "go" to emphasize core vocabulary words and placed them in the books. I developed a lesson to target same/different using toys and objects. The SLP who participated shared an activity that could be put on the classroom interactive whiteboards,

allowing students to demonstrate an understanding of one of the books. I met with each of the participants to share these resources and show how they should be used. After the participants completed their lessons, we met for an interview to discuss how the innovation was used and the effect that it had on instruction. Staff gave feedback, including how it was helpful for some students, but they likely would not have time to adapt each book with picture symbols.

Chapter 3 discusses the methods of the innovation designed to address and study the research questions posed in Chapter 1.

Chapter 3

METHODS

In this chapter, I will describe the setting in which my study took place, the course of events, the participants, my role as a researcher, and the innovation proposed. I will describe my innovation which was guided by the Curricular Noticing Framework (Dietker, Males, Amador, & Earnest, 2018), TPACK (Mishra & Koehler, 2006), and Kent-Walsh & McNaughton's training principles. I applied a mixed-methods approach (Creswell & Plano Clark, 2011) for data collection and analysis to address the research questions presented. The chapter concludes with a description of the procedures and an overview of the timeline of events for this study.

Setting

This action research dissertation took place within a school district located in Maryland, just outside of Washington DC. This district is the sixteenth largest school district in the United States. It consists of a network of 208 schools, separated into regions of downcounty, midcounty, and uppercounty, generally being a mix of suburban and urban neighborhoods bordering/adjacent to Washington DC. Approximately 37 schools host one or more Preschool Special Education (PSE) classrooms. The PSE classes offer a continuum of services for students with disabilities from age three to entering kindergarten. There are five different levels of PSE, differing in 1) length of the program (half-day or full-day), 2) number of days of attendance per week, 3) staffing (number of paraeducators/aides), 4) class size, and 5) inclusion opportunities (time with typically-developing preschool students). Students in PSE, in addition to academic

support, often receive therapy inside and outside the classroom. Most receive speech-language therapy to work on communication goals (PEP, 2018). The PSE program uses a curriculum called Big Day for PreK, developed and sold by Houghton Mifflin Harcourt (formerly Scholastic, Inc .). I implemented this action research within selected schools that are primarily in the downcounty region and some in the midcounty region. I serve schools in these regions and I am familiar with the PSE programs in the area. Initially, I intended to work with six schools for the innovation implementation, with each school having two or more PSE classrooms.

COVID-19 Disruptions

In this section, I will provide a timeline and description of how the global pandemic impacted my study.

After undergoing the approval process from the research unit in my district, I was approved to start data collection for the research study on February 4, 2020. I sent out recruitment emails the next week and followed up two weeks later. I had a group of nine staff members across three schools who agreed to participate in the study. I met with each staff member, some in pairs of a teacher and speech pathologist who work together at the same school. During the initial meetings, I explained the focus of the study, and showed examples of some of the materials I would provide and how to assist them in creating/using with their students. We also discussed obtaining consent for students, and each staff member was given a consent form in English and Spanish to send to families. Staff expressed how eager they were to learn more about supporting students with complex communication needs.

I completed the initial meetings and coaching session number one with staff on March 11, 2020, and was excited to begin the next phase of the innovation. The day after meeting with the last group of participants for the initial session, it was announced that all Maryland schools would be closed for two weeks due to rising concerns about the spread of COVID-19. The virus had recently spread to the Washington, DC area; however, the number of cases at this time were so minimal that staff, families, and students alike were caught off guard. During the two week closure, I took the time to continue making paper-based materials and found some resources that could be used on a smartboard in the classroom. I started creating a website to distribute some of the resources to staff. I was still planning on resuming the study once we returned in April, but then the emergency closure was extended until after spring break. All schools in the district were expected to begin remote learning starting April 4, 2020.

District administrators provisioned the use of both Zoom (Zoom, 2020) and Google Meet (Google Meet, 2020) to conduct virtual lessons and therapy sessions. Staff used both platforms, but due to security concerns, staff were encouraged to use Google Meet as much as possible. Google Meet was also more accessible to parents, as each student had their own Google account to log in. The district gave staff the choice between two classroom management portals to administer their course materials and house online classrooms for student/family access. Staff members were provided some training on how to use these platforms and how to set up courses on the course management systems; however, the turnaround time from the announcement of remote

learning during emergency closure to when these classrooms needed to be set up was brief.

It was at this point that I knew I needed to pivot. I started to make online resources to support remote learning. I researched how to make interactive slides for lessons and started making Google Slides presentations to support the themes in Big Day for PreK. Everything was housed on the Google Site I created. I kept my participants updated on the changes I was making and answered any questions they had about the materials.

It is also critical to define "remote learning", as it differs from "distance learning". Remote learning was the result of an emergency shutdown with little to no preparation for staff or students. Remote learning occurred because the COVID-19 rates were spiking around the country and were starting to increase in Maryland, therefore requiring swift government/administrative action. Remote learning, while it can be effective, served as an immediate, ad-hoc response amid a global crisis. This is distinct from distance learning because distance learning is typically planned with careful consideration in advance. Distance learning often involves a combination of synchronous learning (students participate at the same time) and asynchronous learning (flexible instruction independently, meeting 1:1, or small groups). While asynchronous learning did occur, it was often at the discretion of individual staff members and without a set schedule. Remote learning was in place and educators were tasked with making the educational situation as effective as possible in spite of a tumultuous time of uncertainty.

Participants

PSE teachers and speech-language pathologists (SLPs) working with PSE students were the populations of interest. The PSE teachers instruct one or more PSE classes, as many have a morning and afternoon class. There are approximately 325 SLPs working in the county, with 69 working with a PSE classroom. These two populations (teachers and SLPs) interact with the Big Day for PreK curriculum the most, as teachers are mandated to use it and SLPs are strongly encouraged to follow the themes and curriculum standards in their therapy. The teachers and SLPs in the participant pool have a wide variety of years of experience, from being in their first year to others working close to 20 years. All staff potential participants were women with the exception of two teachers. This sample is representative of PSE staff throughout the county and particularly in the downcounty region of the district.

The participant sample was collected using purposeful sampling (Creswell & Plano Clark, 2011). Twenty PSE teachers and SLPs in the downcounty region were sent recruitment letters via e-mail. Any participants who did not respond within two weeks were sent a follow-up email. This was used to generate a sample of eight participants (four teachers and four SLPs). Teachers and SLPs were recruited in pairs from the same schools in order to allow collaboration and sharing of ideas; however, some participants were studied alone due to staff availability and willingness to participate. A sample of this size and utilizing participants in close proximity to each other allowed for localized support, coaching, and the opportunity to follow up with individualized concerns.

Role of the Researcher

For this study, I was a participant observer. I worked directly with staff members through training and consulting, but also through noting how my innovation affected their practice (as well as my own). A participant observer is involved in research activities and is an "inside" observer (Creswell, 2015). This is a necessary role because my job function is to work with many of these PSE sites to support them with consultations, resources, and coaching, so I am already involved in their practice. On the other hand, I am not often considered someone who is routinely involved in daily classroom activities, so I am also an observer in this light.

Innovation

This innovation was multi-faceted and included a digital repository of resources, coaching with staff members, and ongoing communication with staff in the classrooms. Due to the pandemic, classroom observations were not possible. The innovation integrated principles of Technological Pedagogical Content Knowledge (TPACK) (Mishra & Koehler, 2006) for the development of materials and resources to use with students, and the Curricular Noticing Framework guided classroom observations (Dietker, Males, Amador, & Earnest, 2018). Additionally, the innovation incorporated Kent-Walsh & McNaughton (2005)'s AAC training model, and professional development to do staff coaching.

The first component of the innovation includes a website, or digital repository, of materials that target the Big Day for PreK's Big Experience portion of the school day. Big Experiences, as described by the publisher, "provide integrated learning

opportunities and introduce children to new vocabulary, concepts, and skills" (Scholastic, Inc., 2015). A Big Experience uses the themes to engage students through hands-on learning and the development of ideas. Each theme comes with approximately five to six books that are often used during a Big Experience, so my innovation involved the creation and collection of materials that target core vocabulary (high-frequency words) within the books and thematic units. The website is a Google Site onto which I added materials that have been created by the district's AAC team and resources I created for use in PSE classrooms.

Originally, I had planned to use paper-based materials including communication books with pictures and curriculum books adapted with visual supports and Velcro manipulatives in my innovation. Once we began emergency remote learning, paper-based materials were not able to be equitably distributed, as this would rely on parents to print and assemble materials or staff to purchase the materials, assemble, and deliver to families. Our district had also not provided clear guidelines on if staff were able to individually deliver items to homes due to safety concerns. In addition, staff were already tasked with overhauling their entire instructional method, so it was less than ideal to have staff add more responsibilities to their workload. I created and selected materials that could be used and/or shared through virtual means (Google Site) only.

I used the Dietker, Males, Amador, & Earnest (2018) Curricular Noticing Framework to create an informal checklist to gather information on how PSE teachers and SLPs use Big Day for PreK with students (see Appendix A for checklist). Although this framework was intended for use during observations, I used the framework to

informally collect information on the use of materials during remote learning within questionnaires, interviews, and as I wrote memos. The Curricular Noticing Framework (Dietker, Males, Amador, & Earnest, 2018) targets curricular attending, curricular interpreting, and curricular responding. The checklist includes items related to attending to student needs, the targets of the Big Day for PreK theme (curricular attending), and the interaction within instruction. The checklist has items that target how a teacher or SLP interprets the delivery or execution of Big Day for PreK as well as how they interpret the material's benefit to students (curricular interpreting). Lastly, the checklist contains items related to adapting materials, student engagement, and the use of AAC strategies learned/reviewed through the innovation (curricular responding).

An additional element of the innovation was staff coaching. Through previous research cycles, I identified challenges that PSE teachers and SLPs face when using Big Day for PreK with students who have complex communication needs. By addressing technological knowledge with AAC, content knowledge of the curriculum, and pedagogical knowledge of instructional practices and adaptations, I used the TPACK framework (Mishra & Koehler, 2006) and elements of Kent-Walsh & McNaughton's (2005) communication partner training to guide the content elements of coaching. The coaching addressed staff needs through what was identified in the survey and in discussion. The coaching also considered staff skill set, prior experience working in PSE classrooms, previous training, and students' communication needs.

Using Kent-Walsh & McNaughton's (2005) communication partner training, the coaching model began with a commitment to use of the resources and participation in

coaching. This first meeting also involved me providing access to the Google Site and demonstrating how to download materials. I allowed the teacher or SLP to ask questions and share concerns. I presented materials that have been made using core vocabulary within Big Day for PreK and modeled how it should be used within a group lesson and with various communication supports/devices.

There were one to two additional coaching sessions in which AAC instructional strategies and the use of digital materials were discussed. The additional coaching sessions consisted of answering questions about AAC, providing suggestions to meet student needs and academic goals, training in technology (use of digital tools, technical support, etc.), and sharing ideas or tools that can support Big Day for PreK. I also shared suggestions on how to progress on the original goal set (i.e., an additional modeling strategy). The PSE teacher or SLP continued to use the materials and practice instructional strategies and gain feedback from student performance, family reports, and from the researcher. Finally, there was a final session in which staff completed an interview and ask any follow-up questions. Interview questions can be found in Appendix F.

The final element of the innovation was the researcher's memo writing (Charmaz, 2000; 2014). This consisted of keeping a log of actions and decisions I made throughout the process- decisions related to coaching strategies, resources, or even data collection. I also recorded my reflections on the experience in terms of my own feelings of effectiveness and impact. Memo writing offers the potential to find relationships among categories or target areas and explore ideas through analysis (Charmaz, 2014). I hoped

that this element of the innovation would be an insight into the participant observer role and a support to others hoping to make a change in the area of curriculum adaptation. I wish for this to be a resource for replication purposes and future research in this area.

Procedures

The action research project took place from March 2020 to June 2020. It began with a pre-innovation survey that participants completed independently (Appendix B). They participated in their initial coaching session in which they were shown example materials, committed to participation in the research, and received consent forms to send home to families. Following the onset of emergency remote teaching, staff gained access to the digital repository website. I communicated with staff regarding updates and answering questions through e-mail. Staff participated in one to two check-in coaching sessions, one of which was an interview. Simultaneously, I kept memos and documented my own experiences (Charmaz, 2014). Finally, the participants participated in a post-innovation survey in June 2020 (Appendix C).

Data Collection and Analysis

This study took a mixed-methods approach (Cresswell & Plano Clark, 2011). Table 1 presents an overview of the research questions along with data collection and analysis plans. The table is followed by a description of each element of the innovation and its relation to addressing the research questions.

Table 1

Research Question Alignment to Data Collection and Analysis

Research Question	Data Collection	Data Analysis
1) How and to what extent does implementation of staff coaching and a website with a digital repository of resources ("Adapting Big Day for PreK for AAC") affect teachers' and SLPs' **use of** and **attitudes** toward adapting the Big Day for PreK curriculum for students with severe communication impairments?	Pre-innovation survey (Modified TPACK) Post-innovation survey	Descriptive statistics- minimum value, maximum value, mean, variance, frequency of responses Descriptive relationships between variables
	Interviews	Jeffersonian approach for cleaning up transcripts and deep listening Thematic coding (patterns/categories)

	Website use (reporting of use in post-innovation survey) (reporting in interviews)	Frequency counts - Comparisons with post-innovation survey responses Comparisons with themes in interviews
	Website content	Descriptions of lessons and resources
2) How and to what extent does implementation of staff coaching and a digital repository of resources affect teachers' and SLPs' **actual adaptation** and **use of modified Big Day for PreK curriculum** for students with severe communication impairments?	Interviews -Reporting of adaptation/modification	Thematic coding -Patterns/categories
	Post-innovation survey	Descriptive statistics- minimum value, maximum value, mean, standard deviation, variance, frequency of responses
	Reporting of use	Frequency counts & comparison to patterns from interviews

	Website content	Types of items
3) How and to what extent does implementation of staff coaching and a digital repository of resources affect the researcher's **approach** and **perspective** to AAC consulting?	Researcher memo writing -Google doc -Slack messages	Thematic coding & frequency counts Narrative description of decisions/flowchart Description of resources made by request from participants

In the section below, I will describe each element of the innovation in detail. I also describe the method in which data was collected for each element.

Data Points

Pre-innovation/Post-innovation survey. Staff were administered a pre-innovation survey upon agreeing to participate in the research study. The pre-innovation survey aimed to establish the teachers' and SLPs' needs as well as report their baseline feelings and attitudes towards the Big Day for PreK curriculum. The survey consisted of four background questions to indicate: role (teacher or SLP), the type of PSE program worked in, years of experience, and years of experience in PSE classrooms. Next, the survey used a six-point Likert scale developed using Cullen & Greene's (2011) questionnaire on beliefs, attitudes, and motivation about technology and questions adapted from the TPACK Survey (Schmidt et al., 2009-10). The Likert scale ranged from 1= strongly

disagree to 6= strongly agree. The pre-innovation survey was created and distributed via Qualtrics, a cloud-based survey software (Qualtrics, 2005). After participants responded to the survey, Qualtrics provided descriptive statistics for each survey question, such as minimum values, maximum values, means, and frequency of responses. The same can be done with the post-innovation survey, which was administered at the completion of coaching sessions.

Interviews. The interviews were conducted virtually via Google Meet. This took place during the final coaching session (third or fourth session) and they ranged between 14 and 35 minutes in length. The interview questions, found in Appendix F, were related to staff experience in using a website repository, their perspective on how effective the repository and coaching was, and other potential areas for support. The participants were also offered the opportunity to reflect on their goal progress. The interviews were transcribed using Rev.com transcription services (Rev.com, 2020) and coded using two different methods, as described further in Chapter 4.

Digital repository use. Staff indicated which resources they used on the post-innovation survey. In addition, participants described how they used the digital repository website within the interviews.

Memo writing. I wrote memos and journaled my experiences as a participant observer. I noted my thoughts in terms of what was feeling positive, the barriers I faced, and the challenges I experienced. I recorded my ideas and decisions, if I chose to implement them, and why or why not. The journal was housed electronically in a Google Doc for accessibility and convenience. I also used Slack messages between myself and cohort

members and messages to my dissertation chair to document my reactions and perspective. I used the memos and Slack messages to create visual flowcharts of the processes and decisions made throughout the study (Charmaz, 2000; 2014).

Chapter 4

DATA ANALYSIS, RESULTS, AND FINDINGS

The purpose of this action research project was to explore how a preschool curriculum could be adapted for students with complex communication needs in remote learning, and how staff could be coached in the implementation of supporting resources. The first chapter introduced the context and purpose of this action research project. Chapter 2 reviewed background literature and Chapter 3 described the project's organization, outlining the proposed innovation along with qualitative and quantitative measures, data collection, analysis. In this chapter, I present the results of the study and explain modifications that were made due to COVID-19. I will then present my data and results concerning the research questions. The data and analysis are presented interspersed with narrative accounts of the innovation implementation.

Participants

Due to the unprecedented nature of the pandemic and its impact on education all over the nation, it is understandable that some of the participants who originally agreed to be in the study were unable to continue. Several individuals did not respond to e-mails/attempts to contact, and others directly stated that they had to focus on other priorities at the time. This resulted in having four participants, described below. Participants were told they would remain anonymous, thus I will be using "Participant #" to describe them throughout the reporting of the results.

Participant 1: Participant 1 is a female special education teacher. She has been a special education teacher for 11 years and has worked in the PSE program for

nine years. She teaches two half-day classes with the students with intensive needs, one morning and one afternoon.

Participant 2: Participant 2 is a female speech-language pathologist (SLP) working at the same school as Participant 1. Participant 2 has been an SLP for eight years and has worked in PSE classrooms for all eight years. She provides speech therapy to a classroom with intensive needs and the classroom with specialized support.

Participant 3: Participant 3 is a male special education teacher. He has been teaching for 13 years, six being in the PSE program. He teaches a morning and afternoon class; one classroom for students with specialized support, and the other based on inclusion with a mix of both special needs and typically-developing peers.

Participant 4: Participant 4 is a female SLP. She has been an SLP for five years and has worked in the PSE program for two years. Participant 4 provides speech therapy services for all three levels of PSE: the classroom with specialized support, the intensive needs classroom, and the inclusion model.

All four participants teach or provide speech-language services to three different PSE classroom types, from a PSE setting for children with intensive communication needs and sensory integration needs to a classroom with increased language demands and pre-kindergarten academic skills with specialized support, and a PSE classroom based on inclusion with typically-developing peers (for more mild needs). Some participants work

in more than one type of PSE classroom, as they are each half-day programs. All participants have a Master's degree.

Research Question 1 Analysis

How and to what extent does implementation of staff coaching and a website with a digital repository of resources ("Adapting Big Day for PreK for AAC") affect teachers' and SLPs' **use of** and **attitudes** toward adapting the Big Day for PreK curriculum for students with severe communication impairments?

Three pieces of data were used to answer RQ 1: the pre-innovation survey, post-innovation survey, interviews, and the use of the Google Site.

Responses from the pre-innovation/post-innovation surveys and semi-structured participant interviews (n = 4) were analyzed qualitatively to address RQ 1.

Google Site Components and Use

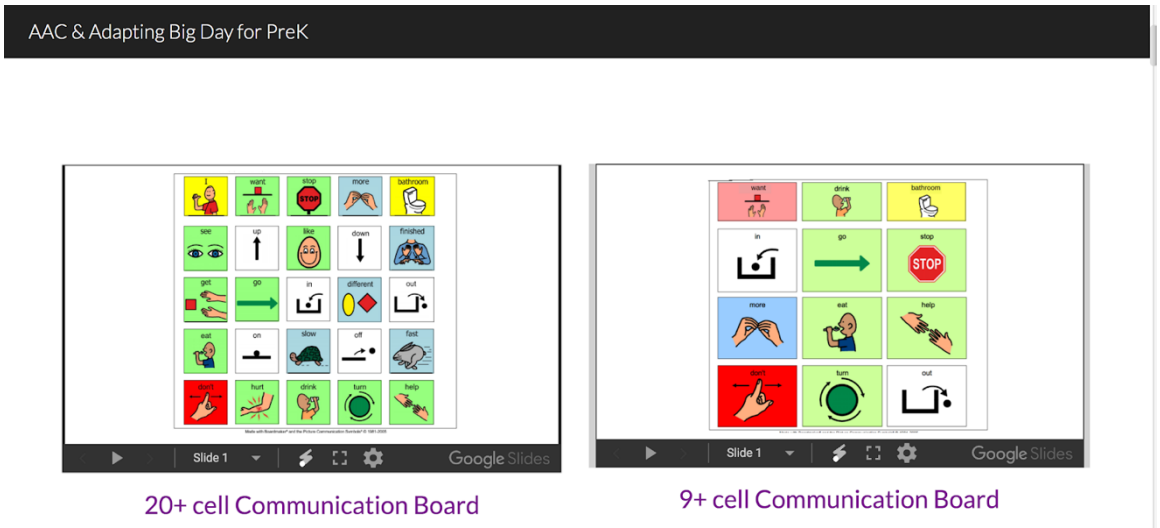
The Google Site, which was titled "AAC & Adapting Big Day for PreK", was created as a repository for resources created for the research project. Originally, the Google Site was intended to house accompanying activities to the communication boards that were created to go with the curriculum books and lesson plans. The site was created to be a place to distribute lessons with additional visuals, activities to support the curriculum books, and have reinforcing materials for download. Once our district shifted to remote learning, the Google Site became the repository and distribution site for everything related to the innovation.

The Google Site "AAC & Adapting Big Day for PreK" contained several types of items. The first section contained "talking" communication boards that could be used

online. I used PDF copies of communication boards that were made using Mayer-Johnson Boardmaker software (Mayer-Johnson, 2002). I recorded my voice saying the words on the board and embedded the sound files in a Google Slide linked with the boards, to make it speak aloud when a button was selected. This was created to replace the paper-based communication boards I had planned to distribute in-person (Figure 3).

Figure 3

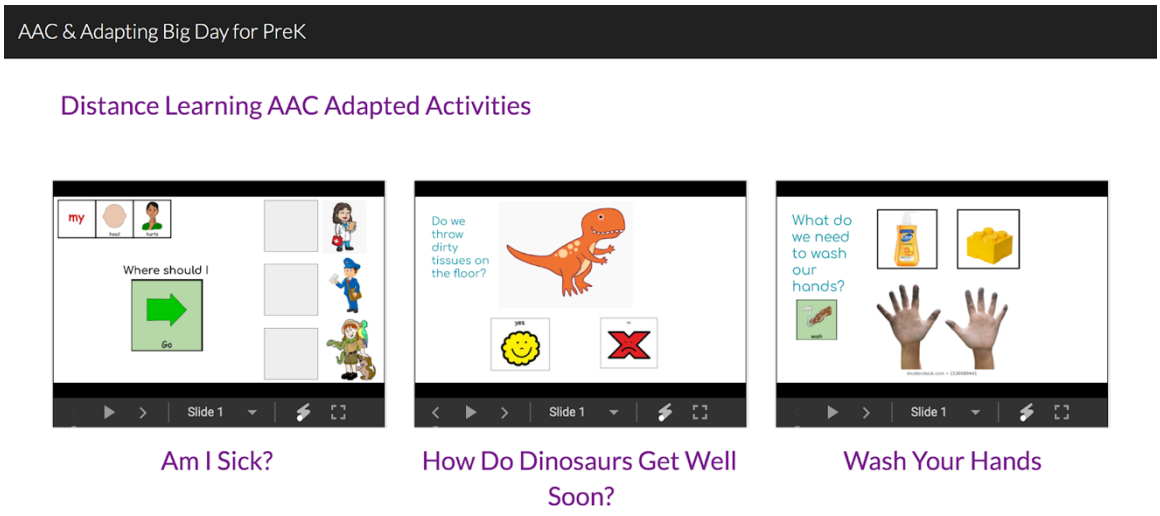
Image of Talking Communication Boards



The Google Site also included activities related to the curriculum books. I embedded visual supports using LessonPix (LessonPix.com, 2020) which is what most PSE staff in our district were using, and Boardmaker (Mayer-Johnson, 2002) (Figure 4).

Figure 4

Image of Adapted Curriculum Books and Activities



Lastly, the Google Site had a collection of materials and activities accessible available online from outside websites, such as online games related to the curriculum themes or printable sets of pictures. Figure 5 presents two games from PBSKids.org (PBS Kids, 2020) that related to the Nature All Around Us theme of Big Day for PreK.

Figure 5

Image of PBSKids.org Games on Google Site

PBS Kids: Sesame Street Seasons Spinner

PBS Kids: Sesame Street Ready, Set, Grow

In the final section of the post-innovation survey, participants reported which of the online materials created for this project they used. They indicated by selecting the titles of the resources. There were 31 items available on the Google Site, and the total number of items used is represented by Table 2.

Table 2

Google Site Use Reporting

Participant	Total Number of Innovation Materials Used
1	8
2	4
3	11
4	3

The participants reported using a range of three to eleven of the resources available on the Google Site. They responded to the survey indicating if they had any favorite items and further described their use of items during interviews.

Participant 1 reported using eight materials, including the talking communication boards, adapted book activities, and printable picture cards. She reported that the talking core boards (communication boards) were most helpful for her students and described some of the home routines that the boards were being used in. Participant 1 also reported that "many parents were happy with the online materials." Participant 2 reported using four materials from the Google Site, including in the survey, "All of the resources were

so helpful! I wish that I had started utilizing them earlier." She started to add innovation materials to her personal online classroom, but this was at the end of the innovation period when she was contacted for the interview. Participant 2 said that the supports were helpful for parents and that some were seeing progress with children. Participant 3 used 11 resources. He mentioned the adapted lessons and book activities as the most helpful for his students. Participant 3 also described how he used the resources along with his colleagues. He went on the Google Site and shared materials he liked with another teacher at his school, who uploaded to an online classroom shared across several PSE rooms. Participant 3 requested additional materials for potential distance learning in the fall as well. Participant 4 used three materials, including a communication board and an activity created related to one of the themes. She did not provide additional information on the survey about what was helpful or feedback from families.

Pre-Innovation Survey

The pre-innovation survey was inspired by the Technological Pedagogical Content Knowledge (TPACK) survey (Schmidt et al., 2009-10), in relating technical knowledge with knowledge of AAC and digital learning tools, pedagogical knowledge with instructional skills, and content knowledge with understanding the curriculum. The survey also looks at the relationships between each of these areas, including the intersection of AAC/digital tools and instructional skills, instructional skills and Big Day for PreK knowledge, and the intersection of AAC/digital tools and curriculum knowledge. I adapted the TPACK survey (Schmidt et al., 2009-10) to reflect my context and the educational environment of emergency remote learning. Four participants

responded to the survey. This included the aforementioned two special education teachers and two speech-language pathologists (SLPs).

Survey items included a Likert scale with *Strongly Disagree* (assigned a value of 4) to *Strongly Agree* (value of 8) in response to various statements. The constructs for the survey items with respective numbers are presented in Appendix D. Mean scores (range of four to 8) and standard deviations are presented in Table 3.

Post-Innovation Survey

The post-innovation survey was adapted from the pre-innovation survey, but reflected changes made to support a remote learning environment. The constructs were broken down by item number in Appendix E. The mean scores (range 4 to 8) and standard deviations of the initial areas of adapted TPACK (Mishra & Koehler, 2006) are presented below in Table 4 through Table 6.

Table 3

Pre-Innovation- and Post-Innovation Survey Scores for AAC & Digital Tools

	Pre-Innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**6.71**	0.45	**7.00**	0.00
Participant 2	**6.86**	0.64	**7.33**	0.47
Participant 3	**6.86**	0.64	**7.67**	0.47
Participant 4	**6.71**	0.45	**7.00**	0.00

Table 4

Pre-Innovation and Post-Innovation Survey Scores for Instructional Practices

	Pre-Innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**7.00**	0.00	**6.75**	0.43
Participant 2	**7.00**	0.00	**7.25**	0.44
Participant 3	**7.29**	0.45	**7.50**	0.50
Participant 4	**7.00**	0.00	**6.50**	0.87

Table 5

Pre-Innovation and Post-Innovation Survey Scores for Curriculum

	Pre-Innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**7.25**	0.43	**7.00**	0.00
Participant 2	**6.50**	0.50	**7.00**	0.00
Participant 3	**7.25**	0.43	**7.00**	0.00
Participant 4	**6.75**	0.43	**7.00**	0.00

In the knowledge area of technology, all participant scores moved in a positive direction from the pre-innovation survey to the post-innovation survey. For example, Participant 3's mean score on the pre-innovation survey in the area of technology was 6.86 and his post-innovation mean score in the same area was 7.67, indicating more

understanding of AAC and digital tools. This aligns with the idea that all participants were required to learn how to use new technology in order to transition to remote learning. Naturally, that their understanding of AAC and tools would be reflected in survey ratings. Instructional practice knowledge scores were scattered, as 2 participants had mean scores move slightly in a positive direction and 2 moved down slightly. Overall, instructional knowledge remained fairly consistent across the period of study. The area of curriculum knowledge demonstrated similar findings, but it is also interesting to note that all post-innovation means were the same. Curriculum use did not appear to be related to the Google Site use, as the two participants who used the most materials from the Google Site moved down in their curriculum knowledge.

I also compared data in the construct area overlaps, such as technology/instruction, curriculum/instruction, technology/curriculum, and all three areas combined (technology/instruction/curriculum).

Table 6

Pre-Innovation and Post-Innovation Survey Scores for Technology/Instruction

	Pre-innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**6.67**	0.47	**7.00**	0.00
Participant 2	**6.00**	1.15	**7.00**	0.00
Participant 3	**6.00**	0.58	**7.33**	0.47
Participant 4	**6.60**	0.80	**7.00**	0.00

Table 7

Pre-Innovation and Post-Innovation Survey Scores for Technology/Curriculum

	Pre-innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**6.75**	0.43	**7.00**	0.00
Participant 2	**5.50**	1.12	**7.50**	0.50
Participant 3	**5.75**	0.43	**7.00**	0.00
Participant 4	**6.25**	0.83	**7.00**	0.00

Table 8

Pre-Innovation and Post-Innovation Survey Scores for Instruction/Curriculum

	Pre-innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**7.00**	0.00	**7.00**	0.00
Participant 2	**6.67**	0.47	**7.00**	0.00
Participant 3	**7.00**	0.00	**7.00**	0.00
Participant 4	**7.00**	0.00	**6.00**	1.00

Table 9

Pre-Innovation and Post-Innovation Survey Scores for Technology/Instruction/ Curriculum

	Pre-innovation Mean Score	SD	*Post-Innovation Mean Score*	SD
Participant 1	**6.67**	0.47	**7.00**	0.00
Participant 2	**6.00**	0.00	**6.67**	0.47
Participant 3	**5.00**	0.82	**7.00**	0.00
Participant 4	**6.00**	0.00	**6.67**	0.47

All participants moved in a positive direction in the areas of technology/instruction, technology/curriculum, and technology/instructional/curriculum. This is favorable toward the use of staff coaching and adapted resources in supporting staff in areas of and similar to TPACK (Mishra & Koehler, 2006). In the area of instruction/curriculum, one participant moved in a positive direction, two remained at the same level, and one moved in a negative direction. The participant who moved in a negative direction used the least amount of resources of the group, which may have affected the participant's use of instructional strategies and curriculum. It is also important to note that this individual also stated difficulty in using the curriculum throughout coaching sessions and in the interview. The individual who experienced the most growth in the area representing a combination of all three constructs, from 5.00 to 7.00, was Participant 3. Participant 3 used the most resources from the Google Site, which is meaningful to the value of the digital repository.

Remote learning was unexpected and a drastic shift from the norm for educators all over the country (and world). It is well-known that many teachers and school staff members felt ill-prepared for teaching in an unfamiliar modality, especially those who are not skilled in technology. Some educators felt unsupported without the proper tools or resources to reach their students. These feelings contribute to a loss of confidence and even a sense of helplessness. Despite this, survey results indicate that educators in my participant pool developed confidence throughout the course of this project. While they participated in the district training and worked tirelessly at providing the best instruction for their students (which should not be overlooked), a key component in their professional growth is the help of the resources and guidance of the innovation. I assert that a combination of staff coaching, exemplar materials, adapted resources, and individual work ethic contributed to positive outcomes in this study.

Interviews

Interviews were conducted with four staff members toward the end of the implementation of the innovation. They were video and audio recorded via Google Meet. The interviews served to explore feelings, attitudes, and experiences that were not indicated on the survey. The interviews were transcribed using Rev.com transcription service and I reviewed them by listening and correcting for accuracy. The transcripts and videos of the interviews were coded with HyperRESEARCH (HyperRESEARCH, 2020) using two different methods. The first of two methods utilized a Jeffersonian transcription approach (Jefferson Transcription System, 2020), coding for emotional data (verbal and nonverbal) related to participants' intonation, hesitancy, pausing, eye contact,

and phrasing. This method was important for me to use because it is an effective initial coding method in exploring the general feelings and attitudes of a speaker. Collecting information about an interviewee's speech patterns and behaviors allows one to gain a richer understanding of the words spoken. I am familiar with using a similar method due to extensive training in analyzing language samples as a speech-language pathologist (SLP). I typically use language samples taken from an individual to look for delays in language development or idiosyncrasies, so although this was a different purpose, I still find great value in examining mannerisms and speech behaviors.

Frequency counts were obtained for various pragmatic features present in the interviews. Appendix G describes each code with more detail and Appendix H provides an example of a frequency count for Participant 1 including the name of the code, the total times it was used, and a bar graph.

You will find a frequency table for all four participants' emotional/pragmatic feature coding in Appendix I.

Fillers

Fillers were used throughout each interview. Fillers were used to both think about an answer before responding ("umm...I think so"), to further clarify ("...she does follow the themes, like, I see the [inclusion] kids getting more involved in the themes, but the others not as easily"), and seemingly as a habitual speech pattern, particularly for Participant 2.

Linguistically, fillers can serve several purposes. One purpose is to fill a pause when the speaker is hesitant (Clark, 1977). The speaker may be trying to formulate an

answer to a question or planning what they would like to say next. The two speech-language pathologists used significantly more fillers than the two teachers who participated in the study. In addition, the two speech pathologists used fewer resources in the innovation than the two teachers. The SLPs may have been more hesitant in answering questions, particularly questions related to how they used the resources available. Bortfeld, Leon, Bloom, Schober, and Brennan (2001) found that fillers such as "um" and "uh" were more associated with older individuals discussing unfamiliar topics and taking a directive role in the conversation. While the two SLPs were the younger members of the participant study, they had fewer years of experience and may not have been as familiar with Big Day for PreK or the innovation materials. This is expected, as SLPs are not mandated to follow the curriculum, even if encouraged. SLPs plan therapy related to age-appropriate expectations often tied to curriculum objectives, but this is not always linked to academic skills as much as functional communication skills. As Participant 4 stated, "So maybe just to make [the innovation materials] like less theme-based. Although I know the whole point is to tie it to the curriculum. So I, yeah, I don't hate me but maybe like a little more general…" She also stated, "...like the themes go by so fast, you know, like, I dunno. I feel like it goes by that's just one week and then we're gonna move on to something else. And I'm like, Oh, but we just learned these words." It is clear that she has the desire to use curriculum-based materials, but does not feel that the themes are always appropriate for improving the communication skills of the students on her caseload. Participant 4 seemed to be hesitant in communicating her difficulties with the curriculum, which can be observed in her use of fillers.

It is critical to note that confirmatory fillers were also significantly used throughout all interviews. Erman (2001) in Laserna, Seih, & Pennebaker (2014) discusses how "you know" serves to confirm understanding. Each participant checked for my understanding throughout their interviews, especially Participant 3. "You know" can also represent a desire for reassurance, such as when Participant 2 stated, "It's hard, you know?" In this instance, the participant was leaving the opportunity for the interviewer to empathize or confirm that things are difficult right now. It should also be noted that Participant 3 used the most amount of confirmatory fillers ("you know") but the least amount of fillers such as "like", "um", or "uh". This participant was the only male in the group. Holmes (1986) studied the function of "you know" in the speech of women and men and found that while both women and men often use "you know" at equal rates, women use it as a way to politely attribute relevant information to the person being addressed more than to appeal for reassurance. Participant 3 used "you know" in the beginning and middle of sentences as well as at the end of sentences, seemingly to both use it as a way to introduce an idea, to check for the listener's understanding as well as a means to get reassurance.

Head Movements

All four participants used head nods and head shakes throughout their interviews. Pragmatically, head nods are used to demonstrate engagement in a conversation when the speaker is talking as well as to elicit feedback from the listener to confirm that they are understanding what is being said. Participant 3 had the most amount of head nods, which is correlated with his high use of confirmatory fillers ("you

know"). For example, when saying, "You know, we're pretty much over the curr- Pretty much outside of the curriculum ones and we're kind of either looking for related books or a couple of times we just kind of say, 'Oh, just you know, just a book,'" Participant 3 used a confirmatory filler and a head nod simultaneously. He wanted to bring up a topic related to difficulty with the curriculum and solicited informal feedback from the listener as well.

Head shakes were often used to convey disagreement, doubt, or confusion about something. Although Participant 3 also used the most amount of head shakes of the participants, Participant 2 demonstrated this often. When asked about ways to improve the innovation, she stated, "And um, kind of a simple schedule. And I don't know, maybe something like that somehow, that you know, um ... I'm not exactly sure how it would look, but…" She paired her head shake with a shrug, fillers, and looking away from the communication partner. Participant 2's hesitancy about what materials she needed was conveyed through various gestures and body movements.

Research Question 2 Analysis

RQ 2) How and to what extent does implementation of staff coaching and a digital repository of resources affect teachers' and SLPs' **actual adaptation** and **use of modified Big Day for PreK curriculum** for students with severe communication impairments?

Results from the semi-structured interviews (n=4) and the post-innovation survey were used to examine RQ2: How and to what extent does implementation of staff coaching and a digital repository of resources affect teachers' and SLPs' **actual**

adaptation and **use of modified Big Day for PreK curriculum** for students with severe communication impairments?

Interviews

As noted before, the audio and video interviews were transcribed by Rev.com (Rev.com, 2020) and coded using two methods- the second method was an eclectic method using thematic coding (Saldaña, 2016). Eclectic coding is a second cycle coding approach that combines two or more methods (p. 212-213, 293). In this case, I combined emotion coding, which labels the participants' feelings/emotions, and concept coding which extrapolates words or phrases to represent larger meanings from data. Appendix J displays the various codes and descriptions of each one (Saldaña, 2016).

Appendix K depicts an example of a frequency count of eclectic codes for Participant 2. The table includes the name of the code, the total times it was used, and a bar graph representing use. In Appendix L you will find a table for all four participants' codes.

Themes

I used some of the most frequently-occurring codes to create themes to unify and integrate the data into assertions, presented in Table 10. Each assertion is built upon specific examples from the interviews and described in narrative form following the table.

Table 10

Themes and Assertions of Educators in Emergency Remote Learning

Theme	Assertions
Parents	Educators recognize that preschool students with complex communication needs rely on adult support. Curriculum material use improved for families with high involvement from adults. Use of adapted materials during remote learning encourages potential training opportunities for families
Difficulty	Staff members experienced great difficulty at the onset of emergency remote learning due to issues with technology, lack of time, and communication with families.
Curriculum	The materials provided by the curriculum are not typically appropriate for students with complex communication needs. Adapted curriculum resources and guidance from coaching support the use of curriculum materials with students who have complex communication needs.

Parents

Each participant discussed parents during their interviews. They talked about families in various capacities, which is logical because so much of remote learning is based on parental support. The participants discussed parents in the realm of their involvement, some of the issues they are dealing with related to school building closure, the training being provided, and general relationships being formed.

Parents were the most-discussed topic because remote learning would not be possible without families. Participant 3 mentioned, “I think we're, you know,

we're different from the upper grades because in our case, typically the parents have to be there with the child." He continued, "[Parents] typically usually have to sit with them and while they're doing [remote learning] so, you know, which is kind of nice because it also means we get the parents involved too." Due to the PSE students being so young (ranging from three years old to six years old), they are typically unable to log into a computer or device and navigate to the correct location. Although there are some students noted to be supported by a sibling, the majority of students are assisted by adults. Parents most often are the ones home with the students as well. None of the participants specifically mentioned other adults assisting students such as grandparents, other family members, or hired professionals to support learning (such as daycare staff or a nanny); however, it is known that some students were not participating in remote learning with parents being the primary support. Nevertheless, all participants used "parents" to refer to families.

In the interviews, participants described how parents were understanding more about their children's needs and communication abilities through emergency remote learning. When asked if she used any of the innovation materials, Participant 1 responded, "...I've definitely used them...with a couple of parents that are, really, you know, on top of things, that's really helpful for them." She stated that one mother was using an interactive communication board during mealtime and during interactions with a sibling of a PSE student. Participant 1 completed her statement by saying "...[the innovation materials] have been

helpful, definitely, for a couple of my students." It appears that the materials did increase the use of the curriculum for families with high involvement.

Study participants were not only able to work with families during emergency remote learning using curriculum and innovation materials, but they also were beginning to think of ideas for the future. Participant 4 described how she and the teacher she works with would like to establish a training series for parents when they return to face-to-face instruction. In reference to a parent training series, she stated,

> "That's what we [want to] do...when we go back to school, we [want to] offer...parent training, regularly...maybe it won't happen every month, but we [want to] make it a priority and teach the parents how to log in to their kids' Google account, and just how to do simple stuff like that, and then also how to do what we do at school, because... then at that time we can, you know, give out different resources that might pertain to their [child], you know, if we know a parent's coming, we can be like, 'This is how we do it for Johnny'".

This school team has been training families on how to use technology and how to implement academic strategies, including language development strategies. They have used this period as a time to consider how families can be better supported in the future. This school team is demonstrating the ability to adapt and innovate with self-sufficiency.

Difficulty

Staff participants expressed several difficulties related to serving students with complex communication needs during emergency remote learning and implementing Big Day for PreK with students. This difficulty directly impacted their use of the curriculum with students in a different environment, as evidenced by direct statements from staff. When asked if she found it challenging to distribute the innovation materials to students, Participant 1 shared, "...it wasn't your site, it was just me. I, before this...I didn't know how to use Google Classroom at all. So, you know, I had a steep learning curve when trying to do this." Several staff members had not needed to use this platform that they were now delivering instruction in. Participant 1 followed this up with, "...now I'm feeling more comfortable. At first, I had a little difficulty. But that was just because I was trying to figure it out." Initially, she was not making many adjustments to her typical instruction, but she later began to incorporate both materials that I had loaded on the Google Site, and she had also started to make some of her own.

Participant 2 admitted that she had not originally looked at the resources available on the Google Site until toward the end of data collection and shortly before the interview. She stated several difficulties that precluded her from exploring them earlier, including the overwhelming amount of paperwork and documentation, lack of time, and communication challenges with parents. She expressed, "I think the resources were super good, super useful, I think that they

are going to be useful. Some of the things that you posted are actually things that I already had posted….on my speech and language website. So it's definitely good, useful stuff and I will use it and I think it will be helpful." Participant 2 had started innovating on her own by starting a website and sharing resources with parents, but she found the innovation materials to be of benefit to her own work.

Curriculum

The Big Day for PreK curriculum was another high-frequency theme. When I discussed how I adapted curriculum themes as a school-based SLP, Participant 1 stated, "I feel like just some of the books and, and materials just don't...they don't lend themselves beautifully to lessons." I stated that I tried to make the themes functional to the students and Participant 1 mentioned, "That's, that's kind of what we do too. You know, pull in something where we can, and then go from there." Participant 1 is using Big Day for PreK and then making modifications that fit the needs of her students. Participant 4 discussed her attempts to use the curriculum. She said, "I tried initially to relate it to their lesson, but it didn't always work out." She also explained how, as an SLP, she does not have as much access to curriculum materials as the teachers at her school. Participant 3 brought up how the PSE teachers at his school were "pretty much over the [curriculum]." They looked at the books and tried to incorporate them into remote learning but otherwise found activities from external sources that were related to the theme without following the curriculum guide. Participant 3 used this reasoning to share how "...having something that definitely relates to

the curriculum that we can just put right in [such as the Google Site innovation materials] is very helpful." For him, the innovation increased his use of Big Day for PreK.

Research Question 3 Analysis

RQ 3) How and to what extent does implementation of staff coaching and a digital repository of resources affect the **researcher's approach** and **perspective** to AAC consulting?

Memo-writing was used to create a narrative to answer RQ 3. Memos consisted of a running Google Doc that I used for several purposes. I wrote notes to myself as reminders, to plan/map out ideas, and perhaps most importantly, to document my thoughts and feelings throughout the process. I also gathered data from Slack messages to cohort members and my dissertation chair. In this section, I will provide a summary of this narrative with specific examples from the memos.

As previously described, the journey to begin this research was extensive even before the global pandemic. There were several moments in which I wondered if I was even going to be able to complete this project within my district, or if I was going to have to take a completely different direction. In a memo written on December 18, 2019, I wrote:

> "Today I talked to [cohort member] and [cohort member]. They're both doing their IRBs or starting to collect data but I'm still waiting. It seems as if any type of research done with students would be considered a modification of what would happen in a typical classroom, so how would anyone do research here?"

On January 4, 2020, I spoke to a retired colleague who had completed her doctorate in the same consultant role that I work in now. She gave me suggestions for trying to contact and compromising with the research unit. I wrote the suggestions in the Google Doc and ended the notes with, "Hopefully this at least gives it a push." I was feeling as though I had some direction and encouraged by someone who had also overcome issues completing doctoral research in the same district. I did end up speaking on the phone with someone from the research unit two days later and we had agreed upon the idea to implement the innovation during students' lunchtime. In my memo document, I wrote, "Finally a breakthrough. It's not how I planned on doing this [project] but going to make it work." Although disappointed that my potential participants would not have the liberty to implement my innovation in their instructional/therapeutic time or when it worked best for them, I was determined to study this topic however I could. I sent an email update to the research unit on January 7, 2020 with the changes to my proposed study. It was important for me to be flexible as a staff coach because it is our responsibility to provide guidance and support staff with ideas for students who are having challenges. I wanted to meet the needs of staff for an identified problem.

Two weeks later, my dissertation chair encouraged me to check in with the research unit about the proposed changes. I received a response on January 21, 2020 saying that the research unit was moving forward with the review process for my study. I sent Slack messages to both my dissertation chair and cohort members updating them on this progress. One message stated, "I think I'll finally be able to start. I feel so behind but at least I can plow through for the next 4 months." I was concerned but enthusiastic to

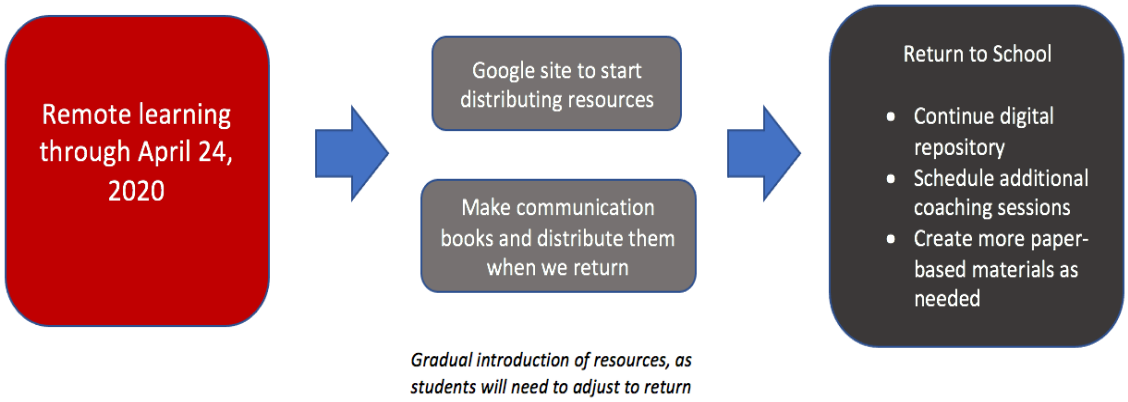
start. As described in Chapter 3, on February 4, 2020, I received research approval and began to send out my recruitment materials. This was both a relief and overwhelming at the same time- I had been so focused on starting that I had not considered all of the time this was going to take to meet with all of the staff who agreed to participate.

By the end of the month when I had met with the majority of the participant pool, that is when COVID-19 became a larger news topic. I naively thought that the virus was not a threat to my geographical area until early March when Maryland discovered their initial cases. When schools underwent emergency closure for two weeks, I messaged with my dissertation chair and wrote in the Google Doc, "The coronavirus is actually spreading here. We have two weeks out of school so this is going to delay the distribution of materials, but I guess it will give me more time to get the website going."

As COVID-19 continued to spread and our closure turned into emergency remote learning, it was clear to me that I was going to need to adjust my research. I drew a decision-making chart to map out a plan.

Figure 6

Decision Flowchart During Emergency Closure



Making this flowchart helped me organize what I wanted to do and how it could feasibly happen given an unpredictable situation.

I was invested in this project due to my position as an AAC consultant. As remote learning became established, my team was also finding its role. It was a time of uncertainty and waiting for decisions from the central office staff. The AAC team did not originally have directives, as central office's primary responsibility was to decide on the role of classroom teachers and other school-based personnel before consultants. Due to this, we were somewhat tasked with creating our own role within remote learning. While we waited for classroom teachers and school-based therapists to receive guidance on making their schedules and while they took technology trainings, our team took several approaches. As consultants, our roles are highly dependent upon what school-based staff do. I considered what the needs are of the students I support and the skill set of staff members. I took several training courses related to some of the digital tools that were

available to staff and this helped in the creation of materials for the Google Site. I also reached out to staff members on my caseload to see what kinds of resources they thought would be most helpful, which informed my innovation and contact with the participants in my study.

Around this time, my dissertation chair introduced the idea that schools may not go back in-person in the 2019-2020 school year. I had not considered this overwhelming idea and wrote down questions in my Google Doc.

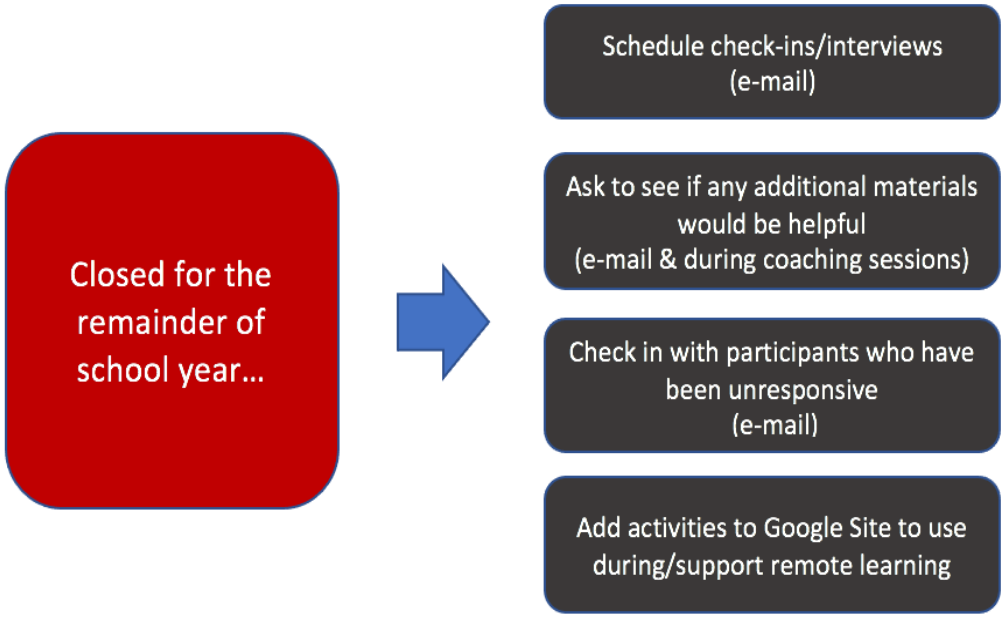
- "If we don't go back, will they [school district] tell me I can't do the research?"
- "What if they say that there is just too much going on while staff figure out remote learning that they are not allowed to participate in anything else?"
- "Will I keep losing participants as they cope with/face all of the changes?"
- "How will I continue to support them without bothering them when we can't have face-to-face meetings?

It was beneficial to me to document my concerns and how I worked through them.

On May 6, 2020, the state superintendent announced that all Maryland schools would remain closed for the rest of the school year. I had been expecting it at this point, so I felt determined to keep making modifications. I informed the research unit of the changes I was making. I was apprehensive about the response I would receive (in case I was told to cease all research activities), but I was met with an email thanking me for the update. This was a relief and allowed me to move forward with my research with more liberty. I drew a new flowchart.

Figure 7

Decision Flowchart After Full Closure Announced



This flowchart helped me map out how my innovation was going to look in a fully virtual environment, now that it was official we were not going to return to the buildings.

As I communicated with staff about the changes and scheduled interviews to check in, it became more apparent that we were nearing the end of the school year. With so many uncertainties, it had occurred to me that I needed to complete data collection toward the end of May, as June is typically reserved for wrapping up the school year and preparing for summer learning. I knew staff would not have as much time to participate in activities, and several participants had expressed that they are not invested in the last theme of the Big Day for PreK curriculum anyway. At this point, I felt a bit disheartened

and I questioned if what I was doing was actually staff coaching. I felt as though I had done so much waiting to see what would happen in relation to my research unit and then with daily changes due to COVID-19, that I had not implemented a legitimate coaching model. I discussed this with my dissertation chair and was reminded that I had created resources, established a website that would serve as a model for future distance learning opportunities, had communicated with staff to explain the materials, and made some additional materials based on their individual needs. It is natural, as a staff coach, to question your own impact, but it is important to reflect on it constructively rather than determining it was not enough. I walked away from this reflection writing in my Google Doc, "Even though there are some aspects of staff coaching that I wish I had more time to do, I had strong feedback from the teachers and SLPs that I did get to work with and can hopefully get some materials ready for the fall if we are still doing some form of distance learning." We did end up continuing distance learning into September 2020, and I am currently working on improving some of the innovation materials to support staff with the current curriculum themes.

E-mail became a key component of staff coaching because that served as a consistent method of communication between participants and I informed them of when new resources were posted on the Google Site via e-mail. I also sent e-mails to update and check in as we adjusted instructional procedures through the closure. Three of the participants (Participants 1, 2, and 3) used e-mail to initiate contact with questions and/or to ask for additional materials customized for students. E-mail served as a method of correspondence in between coaching sessions, as it was originally only going to serve to

schedule the sessions. It proved to be much more valuable during a period when we were unable to be in school buildings or meet face-to-face.

I can attest that this process encouraged me, as a coach, to engage with the curriculum more. As an AAC consultant, my work was already heavily immersed in the understanding and use of communication devices, visual supports, and alternative access. I found it fairly simple to learn how to make communication supports accessible via digital learning. I felt that the most change occurred in my use of Big Day for PreK. While I used the curriculum as a school-based SLP prior to my role on the AAC team, I had not often utilized it to create resources as an AAC consultant. I knew that PSE staff were mandated to use Big Day for PreK, but I was more focused on core vocabulary and functional communication strategies rather than tying directly to the curriculum. When I employed this research study, it required me to align my materials with the themes and ensure that the resources I presented were relevant to what students needed to learn. I attempted to make the materials appropriate to the context of remote learning, as I know both families and staff were facing issues bigger than curriculum goals. I tried to consider academic skills that are salient to the home environment and the remote learning context when creating materials. Through this, I learned that a consultant and staff coach must be adaptable and responsive to the needs at hand.

Chapter 5

DISCUSSION

The purpose of this study was to further understand how special education teachers and speech-language pathologists (SLPs) engage with the Big Day for PreK curriculum and implement augmentative and alternative communication (AAC) within the preschool special education (PSE) program. Through previous cycles of research, I came to understand that there were several issues raised related to the relevance of the curriculum, the accessibility/appropriateness for preschool students with severe communication needs, and the amount of preparation provided to staff required to use Big Day for PreK. As an augmentative and alternative communication (AAC) consultant, my role is to support students and staff in the implementation of assistive technology such as communication devices, visual supports, and alternative communication strategies. I wanted to explore the challenges faced by staff members to gain a deeper understanding and then create an innovation to serve as a bridge between Big Day for PreK content and the functional communication needs of students. I desired to coach staff in how to use materials I had created so they could be empowered to innovate on their own. Although there were significant shifts upon the implementation of my innovation, I remained true to the original intentions of this research.

Outcomes Guided by Theory

In this section, the findings of the research study are related to the theories guiding this research. First, the outcomes related to staff coaching are presented,

followed by the Curricular Noticing Framework (Dietiker, Males, Amador, & Earnest, 2018). I also discuss findings in connection with the TPACK framework (Mishra & Koehler, 2006). Next, I connect the outcomes of this project to the background research on staff coaching, the Curricular Noticing Framework, and TPACK.

Outcomes Related to Staff Coaching

Staff coaching is a dynamic process that can be conducted in several formats. Yoshikawa et al. (2013) used expert teachers to coach with face-to-face meetings and online/video observations. The authors advocated for pre-service training with in-class experiences, web-based training, and specific training when working with children with disabilities (p. 8). While it was not possible to implement in-person meetings during school building closures, virtual meetings are still supportive of authentic face-to-face interactions. Participants in this study did not report any difficulty with meeting through virtual meetings; however, the nature of uncertainty related to the pandemic made it difficult to schedule ongoing meetings. In a more structured distance learning environment (outside of emergency closure), meeting virtually allows for more flexibility in scheduling and the ability to practice with digital tools prior to meeting with students.

Akalin, Demur, Sucuoğlu, Bakkaloğlu, H., & İşcen, F. (2014) studied preschool classrooms and the coaching staff on the inclusion of students in special education. They concluded that teachers need support from special education teachers, materials, tools for adapting the curriculum for daily routines, and strategies for engagement (p. 41-42). This

aligns with the outcomes of this study. Although the staff who participated in this study all work in special education already, they reported requiring assistance from an expert in an area such as AAC and reinforced the need for tools and strategies. As remote learning became established, staff reported the benefits of having an example on creating adapted lessons for online learning and how to embed AAC supports in remote learning materials.

Sennott, Crest, Fogarty, & Hix-Small (2017) used the MODELER AAC intervention program to coach staff working with children with complex communication needs in an early childhood setting. The MODELER program consisted of developing background knowledge of the curriculum, modeling techniques, memorizing strategies, self-rating, and implementing strategies in the classroom session with observations. Although I was prevented from conducting observations in the classrooms by district regulations, I used various aspects of MODELER in the development of my innovation. Staff were modeled strategies through the use of the Google Site with resources. These strategies provided staff with exemplars on how to adapt materials and staff were provided with notes on how to use the activities. Staff provided feedback based on their own experiences with the materials and reported their own areas of improvement and understanding of virtual learning tools.

Finally, O'Keefe (2017) evaluated coaching models with early childhood education programs. O'Keefe used a hybrid (video-based and online coaching), an approach using weekly coaching and modeling, and a government-based framework with three parts (planning, observation, reflection). O'Keefe concluded that each model had

benefits and few drawbacks; coaching supports students, professions, and leadership. This is especially pertinent to the context of my research, as my coaching model did not follow a distinct model. It evolved over time and as the needs of participants changed due to the circumstances at hand. The participants in this study reported the benefits of receiving the coaching and innovation materials, further supporting the idea of the positive impact of a staff coaching model in early childhood programs. I found that this model took key components of those studied by O'Keefe, as it ended up being exclusively online, modeling of techniques, and involved planning and reflection.

Outcomes Related to the Curricular Noticing Framework

The Curricular Noticing Framework (Dietiker, Males, Amador, & Earnest, 2018) examines the relationship between the educator and curriculum materials. It is centered on the idea of "participation with curricular materials, [understanding] their affordances and limitations, and [using] strategies to act" (p. 521). It involves attending to the needs materials, interpreting how the materials are supposed to be used, and responding within the context of student needs and the educators' own experiences/skills. Taylor (2012) further studied the Curriculum Noticing Framework (Dietiker et al., 2018) and concluded that we often do not know when, how, or how much curricula are adapted.

Through the process of this research, I found that staff are heavily adapting the Big Day for PreK curriculum to meet the needs of their students with complex communication needs. One participant admits to not following the curriculum materials,

but instead focusing on activities that she feels are more functional. She occasionally will do a lesson that aligns with the theme, but she does not follow specific lessons provided by the curriculum guide. Other participants use the books that are available but supplement with their own books that connect to the theme. Staff reported that the innovation materials were conducive to connecting the Big Day for PreK curriculum lessons and books to activities that support students' communication development. The innovation materials helped more students participate in aspects of Big Day of PreK and gave staff assistance in how they could also adapt the lessons for individual student needs.

Outcomes Related to the TPACK Framework

Mishra & Koehler (2006) developed the TPACK framework that focuses on technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) for implementing educational technology within educational settings.

Cacho (2014) used a TPACK Likert scale (Likert, 1932) to gauge the perception of student-teacher mentor modeling of TPACK. Survey respondents reported that university professors exhibited high competence and modeled TPACK strategies, but mentor teachers only do this sometimes. Although this study did not use the established TPACK survey, the pre-innovation and post-innovation surveys were still adapted from TPACK and examined similar areas of need specific to technology, pedagogical practices, curriculum content knowledge. The participants in this research study did not have a significant change in the area of instructional practices between the pre-innovation

and post-innovation surveys. This may demonstrate the need for additional time and opportunities to model TPACK principles.

Lyublinskaya & Tournaki (2014) studied the development of TPACK skills and principles with 100 preservice special education teachers in a course using the *TPACK Levels Rubric.* The researchers concluded that TPACK scores increased after course requirements were completed. They found that there were significant changes between earlier in the course and at the end of the course; however, that the increase was mostly related to accepting the process rather than more advanced levels of integrating technology and instruction. The researchers suggested that this was due to the short time to study TPACK development and that to truly become advanced at integrating and/or embedding technology in instruction, one must engage in a complex and lengthy process. This study found similar results, as the pre- and post-innovation scores only slightly increased in most areas of the adapted survey related to TPACK constructs. The decreased length of time of this study made it difficult to go beyond the basics of incorporating AAC and digital tools within Big Day for PreK instruction. Not only were there limited coaching sessions to model TPACK-related strategies, but staff were shifting to a new instructional modality that they had never faced, so it is appropriate that they would only reach early levels of the technology integration process.

In addition, I did not originally consider how the areas of TPACK (Mishra & Koehler, 2006) developed and were shaped within myself, the researcher. To support staff for coaching and to make interactive digital resources, I took professional development courses offered by the school district, courses offered through outside

organizations related to speech therapy telepractice and virtual AAC, and I also watched countless video tutorials to teach myself technology features. From the start of the emergency closure to the end of the spring, I developed confidence in my technological skills and felt more comfortable giving ideas to staff members, both within the participant pool and in my regular role as a consultant. I feel that the pedagogical area of TPACK also developed as I learned flexibility. Students had a new set of needs in the home environment that we often did not see or understand before the pandemic. Although special educators and therapists are tasked with making the curriculum accessible to students and helping them meet academic goals is the primary focus of the job responsibility, I began to shape my own instructional practices and strategies to address challenges in home routines. One of the staff members requested a tool to help a student stay at the computer instead of wandering off. While this would not typically be something I would make, I understood how this skill (remaining at the computer) is crucial for remote learning and how AAC can provide an alternative means of presenting information to students. In the area of content knowledge, I also used the curriculum within this research study more than I ever did before. Prior to this, I was aware of themes, but I did not always focus my own support on Big Day for PreK. This process allowed me to think more critically about which books could be most accessible to students with varying needs and which activities would lend themselves to a virtual environment. This deepened my understanding of Big Day for PreK and additional ways to use the curriculum. Holding true with TPACK, I developed in all three areas of the framework, but in the context of my environment, the actual process of staff coaching

involved the simultaneous interaction of technology, pedagogy, and content knowledge. The shift in the environment from in-person instruction to remote learning played a large role in the TPACK process for me. I had not anticipated that I would experience such a shift in my work, but TPACK is a critical part of every educator's growth- even the researcher's.

Limitations

This research did not occur without significant compromise. Although I originally proposed the research and was approved by the committee in mid-November 2019 and quickly submitted the plans to my school district's research unit, there were several delays. I had been warned that this is an extensive process, likely due to being such a large school district. I engaged in several discussions related to doing classroom observations and recruiting methods, but the largest area of compromise was not conflicting with instructional time. Even though I aimed to support staff during their instruction and therapy, I understood the ethical issues surrounding students participating in research during class time. We agreed on the idea that staff members would use innovation materials during snack time or lunchtime, the only period of the day in which instruction was not provided. This delaying process reduced the potential for additional coaching sessions; however, it was a necessary step in the research process.

An additional limitation was the sample size of the participant group. I had proposed to involve around 10 to 12 participants in this project. Due to the challenges of a global pandemic, this did not happen. I began the study with additional participants interested (eight); however, as the implementation of procedures commenced, and

emergency remote learning commenced, attrition occurred. A smaller participant pool limited the range of outcomes observed as a result of the innovation and also limits potential conclusions in the analysis of data.

The onset of COVID-19 was both unexpected and unprecedented. No one had any idea that when we packed up materials on March 13, 2020, that schools would not open for the rest of the school year, let alone the calendar year. An unanticipated closure meant that staff were unprepared with materials at home to instruct and/or provide therapy, that they were unfamiliar with the platforms and tools required to participate in remote learning, and they had not had formal training in virtual instructional practices. More importantly, many children with special needs have been the most affected group by remote learning, as it can be more difficult for these students to attend and/or interact with a computer screen, and many require instructional strategies that can only be provided face-to-face. Staff, including the participants in this study, were required to become family coaches at the same time they were being coached.

Because of the timing of the pandemic in relation to the implementation of research, I had to make changes I was unprepared to make. The initial coaching sessions would have had an entirely different focus from displaying the paper-based materials if I had known that we would soon be engaging in remote learning. Moreover, the post-innovation survey had to be modified significantly from the pre-innovation survey to reflect virtual learning and the actual context of instruction at the time. Due to these changes, I could not have direct comparisons between survey questions, but instead could

solely focus on constructs. While this was still an effective measurement, I had hoped to have identical surveys before and after the innovation.

Additionally, the general stress and anxiety surrounding the unknown affected every single participant in this study, including the researcher. We all were waiting for decisions and answers, all while concerned for the health of ourselves and our families. It cannot be ignored that external factors play a role in job performance and effectiveness, so it is completely understandable that the participants' feelings of being overwhelmed and concerned affected their ability to access the innovation on top of typical job responsibilities. Although the goal of the innovation was to make adaptation easier and to facilitate the shift to remote learning, it may have still been seen as "one more thing" on participant plates and the reason why several participants discontinued participation in the study.

Lessons Learned

I engaged in this research with the expectation that I would gain a greater understanding of how PSE teachers and SLPs were using Big Day for PreK and their attitudes surrounding the curriculum. I felt that it was important to understand their use of the curriculum to improve the coaching process and how to support staff in a consultant role. This, in turn, would ideally "trickle down" to having a positive effect on students, which is the ultimate goal. Throughout this exploration process, I also discovered the importance of flexibility and adjustment as both a researcher and as a consultant.

Staff and Staff Coaching

This process has undoubtedly shown me how much dedication and resilience educators have. COVID-19 has had an immense impact on the field of education in all areas and we are still experiencing its effect. The ability of preschool special education (PSE) teachers and speech-language pathologists (SLPs) to overhaul much of the instructional methods they were used to using with such a vulnerable, yet rewarding, population should not go without acknowledgment. Although I do hope that I made a positive impact on this experience, my participants' willingness to learn and be open during such a critical time is noteworthy.

I also learned that committing to supporting staff means that a staff coach and consultant must truly be adaptable. Not only should a coach be prepared to adapt to an environmental shift as unique as a pandemic, but they should also be flexible to the individual needs of the staff members they are supporting. Despite having staff commit to participation in the innovation and coaching experience, I still had some who did not utilize resources to the extent that I anticipated. I now know that I should not expect that everyone will find the same benefit from the support, and everyone will not need the same support. While this seems obvious, it is difficult to remember when in practice. A staff coach must honor the expertise that staff members already have and adjust according to what serves the individual to make the most impact.

Myself as a Researcher

I have learned much about myself in the course of this project. Principally, I have learned that my work style is relaxed. While this serves me well in the role of a

consultant to deescalate and approach challenges with a level head, it may not have been ideal at various points in the research process to keep pushing forward. I have also learned to truly embrace the action research process. I understand how functional the cyclical process is. It would not be appropriate to make final determinations that are not ever revisited or expounded upon in an ever-changing educational environment. I am looking forward to the future research that comes from this era in education and this specific topic.

Current State

As data collection ended in June 2020, I would like to share the present state of the educational context and the support provided to staff as a result of the innovation. The school district made the decision not to reopen for fall 2020, and as of mid-October 2020, students are still learning remotely. At the start of the school year, district administrators created a standard schedule for grade levels (preschool/elementary schedule and middle/high school schedule). The length of the instructional day was lengthened and staff members were required to provide synchronous learning each day, whereas in the spring one could set up a virtual classroom and provide materials without meeting as a group. Students, staff, and families in the community alike have all noted increased organization and workload. It is generally accepted that this period is considered "distance learning" as opposed to emergency remote learning.

Now that I am no longer engaged in the data collection process, I have begun releasing some of the materials that were part of the innovation. I have shared materials that are unrelated to themes with teachers and SLPs I currently support (due to fall

semester themes being different than spring semester themes), and have heard informal positive feedback. I am currently creating additional resources for the upcoming fall themes to be released starting in November 2020. I have learned about additional tools and features that are available to supplement distance learning materials, so I am incorporating those. We are unsure of who or when we will return to in-person instruction, perhaps in the winter or spring, but much of what was created for use online can be easily adjusted for use in the classroom. In addition, it is suspected that some students will still not be able to return to school buildings until there is more of a handle on the spread of COVID-19, so the remote learning materials can still be utilized with these individuals.

Future Iterations of Research

Due to what was learned from this research project and the evolutionary nature of education, there is a need for additional exploration in staff coaching and adaptation of curriculum for students with complex needs. This is true for both in-person and remote learning. I believe it would be beneficial for future investigators to work directly with students and families, if possible. As outlined in the assertions, families are an integral part of the preschool education system. Involving families in goal-setting, training, and distributing resources to be used at home all have the potential to have a significant impact on the progress of students. It would have also been helpful to observe students in the use of adapted materials to directly see how the materials are functioning in the "real world".

Future research should also include additional elements of staff coaching. I believe the staff members who participated in this project could have gained from additional coaching sessions with topics that were not covered, such as specific technical features (split-screen computer modeling, touchscreen computer access, etc.) I would also have staff keep their own log of experiences about their individual needs and goals to gain more insight into the participant's perspective.

Finally, it has been mentioned that my school district is in the process of changing curriculums from Big Day for PreK, so this would be a fitting test of transferability of the current project. While it would be ideal that the curriculum is perfectly appropriate for use with students who have complex communication needs, this is unrealistic. I look forward to seeing how this approach to adapting curriculum and staff coaching can be applied to a new preschool special education curriculum.

Conclusion

Preschool special education is a unique context and its success rests on many factors, including staff support, the use of technology, instructional practices, and curriculum effectiveness. With the increasing demands on staff to provide quality education, staff coaching is a useful means of addressing these factors and potential areas of need. In addition, staff support can come from guidance in adapting curriculum materials to better serve the individual needs of students with complex communication needs. This study highlighted the importance of staff support being adaptable to the context as it was implemented in the midst of emergency remote learning during a global pandemic. Despite the uncertainty, frequent changes, and limited (or likely no)

experience with this type of instructional environment, the researcher participants in this study, along with educators all over the country, persevered. This research project revealed that addressing technical knowledge in the form of augmentative and alternative communication (AAC) and digital learning tools, building pedagogical knowledge through instructional practices specific to communication development, and increasing content knowledge by making the curriculum accessible to students through adaptation is an effective means of supporting educators. The study demonstrates the significance of commitment to a problem of practice (i.e., students not accessing the curriculum and staff struggling to do so), and implementing a multifaceted innovation to produce a positive impact within a dynamic environment. This project demonstrated the resilience and dedication to educating students, especially students with the most unique needs. Additionally, the study revealed that the researcher's own reflections and decision-making tools are valuable to increase the use and adaptation of preschool curricula for students with complex communication needs. I have grown through this experience and truly understand the value of action research and how it continues to evolve without requiring an absolute resolve.

References

Akalın, S., Demur, Ş., Sucuoğlu, B., Bakkaloğlu, H., & İşcen, F. (2014). The needs of inclusive preschool teachers about inclusive practices. *Eurasian Journal of Educational Research, 54*, 39-60. Retrieved from https://files.eric.ed.gov/fulltext/EJ1057302.pdf

Alexander, F., & Block, C. C. (2011). Scholastic Big Day for Pre K Program shows positive impact on children's language, literacy, and mathematical development. New York, NY: Scholastic Inc.

Alston, J., & Kilham, C. (2004). Adaptive education for students with special needs in the inclusive classroom. Australian Journal of Early Childhood, 29(3), 24-33.

American Speech-Language-Hearing Association (ASHA). *Augmentative and Alternative Communication (AAC).* (2017). Retrieved March 20, 2018, from https://www.asha.org/public/speech/disorders/AAC/

Balandin, S., & Iacono, T. (1998). Topics of meal break conversations. *Augmentative and Alternative Communication, 14,* 131-146.

Banajee, M., Dicarlo, C., & Buras Stricklin, S. (2003). Core Vocabulary Determination for Toddlers. *Augmentative and Alternative Communication*, *19*(2), 67–73.

Barker, R.M., Akaba, S., Brady, N.C., & Thiemann-Bourque, K. (2013). Support for AAC use in preschool, and growth in language skills, for young children with developmental disabilities. *Augmentative and Alternative Communication*, *29*, 334 – 346. doi:10.3109/07434618.2013.848933

Bortfeld H, Leon SD, Bloom JE, Schober MF, Brennan SE. Disfluency rates in conversation: effects of age, relationship, topic, role, and gender. Lang Speech. 2001 Jun;44(Pt 2):123-47. doi: 10.1177/00238309010440020101. PMID: 11575901

Beukelman, D., & Mirenda, P. (2013). *Augmentative and alternative communication: Supporting children and adults with complex communication needs* (4th ed.). Baltimore: Paul H Brookes Publishing Co.

Cacho, R.M. (2014). TPCK Assessment of Pre-service Teachers toward Enhancing Teacher Educators' Modeling. *Asian Journal of Education and e-Learning, 2*(5), 349-356.

Charmaz, K. (2000). Grounded theory: Objectivist and constructivist methods. In N. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 509-535). Thousand Oaks: Sage.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Los Angeles: Sage.

Creswell, J. W. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Boston, MA: Pearson.

Creswell, J.W. & Plano Clark, V.L. *Designing and conducting mixed methods research* (2nd ed.).Sage; Thousand Oaks, CA: 2011.

Cullen, T.A. & Greene, B.A. (2011). *Journal of Educational Computing Research.* Preservice teachers' beliefs, attitudes, and motivation about technology Integration, 728-738.

Darling-Churchill, K.E. & Lippman, L. (2016). Early childhood social and emotional development: Advancing the field of measurement. *Journal of Applied Developmental Psychology, 45*(2016), 1-7.

Darling-Hammond, L. (1995). Changing conceptions of teaching and teacher development. Teacher Education Quarterly, 22, 9–26.

Dietiker, L., Males, L.M., Amador, J.M., & Earnest, D. (2018). Curricular noticing: A framework to describe teachers' interactions with curriculum materials. *Journal for Research to Mathematics Education*, *49*(5), 521-532.

Fallon, K. A., Light, J. C., & Paige, T. K. (2001). Enhancing Vocabulary Selection for Preschoolers Who Require Augmentative and Alternative Communication (AAC). *American Journal of Speech-Language Pathology, 10*(1), 81-94. doi:10.1044/1058-0360(2001/010)

Fields, A.R. (2015). Examining barriers with implementing augmentative and alternative communication in a midwest school. Walden University.

Google Meet (2020). Retrieved June 01, 2020, from https://meet.google.com/

Holmes, J. (1986). Functions of you know in women's and men's speech. Language in Society, 15, 1-22.

Houghton Mifflin Harcourt (2019). *Big Day for PreK*. Retrieved August 5, 2019, from http://www.hmhco.com/products/big-day-pre-k/big-day-forprekindergarten.htm

HyperRESEARCH (n.d.). Researchware, Inc. Retrieved September 10, 2020, from http://www.researchware.com/products/hyperresearch.html

InterACT. (2019). Retrieved July 3, 2019, from http://www.montgomeryschoolsmd.org/departments/interact/

International Bureau of Education (IBE)-United Nations Educational, Scientific, and Cultural Organizations (UNESCO). (2017). Training tools for curriculum development: developing and implementing curriculum frameworks. Geneva, Switzerland. Retrieved April 26, 2018 from unesdoc.unesco.org/images/0025/002500/250052e.pdf

Jefferson Transcription System - A guide to the symbols. (2020, August 16). Retrieved October 14, 2020, from https://www.universitytranscriptions.co.uk/jefferson-transcription-system-a-guide-to-the-symbols

Kent-Walsh, J., & Mcnaughton, D. (2005). Communication Partner Instruction in AAC: Present Practices and Future Directions, Augmentative and Alternative Communication. *Augmentative and Alternative Communication, 21*(3), 195-204.

Kurt, S. "Technological Pedagogical Content Knowledge (TPACK) Framework," in *Educational Technology*, May 12, 2018. Retrieved from https://educationaltechnology.net/technological-pedagogical-content-knowledge-tpack-framework/

Laserna, C. M., Seih, Y., & Pennebaker, J. W. (2014). Um . . . Who Like Says You Know. *Journal of Language and Social Psychology, 33*(3), 328-338. doi:10.1177/0261927x14526993

LessonPix.com: Custom Materials. (n.d.). Retrieved September 20, 2020, from http://lessonpix.com/

Likert, R. (1932). A Technique for the Measurement of Attitudes. *Archives of Psychology*, 140, 1–55.

Marino, M. T., & Beecher, C. C. (2008). Assistive technology policy: Promoting inclusive education for students with reading disabilities. *Northwest Passage*, 6(1),14-22.

Maryland EXCELS. (2020). Rating scales. Maryland State Department of Education. Retrieved from http://olms.cte.jhu.edu/olms2/508052

Mayer-Johnson, Inc. (2002). Boardmaker. Solana Beach, Calif. :Mayer-Johnson, Inc.

McLaren, E. M., Bausch, M. E., & Jones Ault, M. (2007). Collaboration strategies reported by teachers providing assistive technology services. Journal of Special Education Technology, 22(4), 16-29.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teachers' knowledge. Teachers College Record, 108 (6), 1017–1054.

National Center on Quality Teaching and Learning (NCQTL). (2015). Preschool Curriculum Consumer Report. Retrieved April 20, 2018 from https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/curriculum-consumer-report.pdf

O'Keefe, B. (2017). Primetime for Coaching: Improving Instructional Coaching in Early Childhood Education. Bellwether Education Partners. Retrieved August 4, 2019 from https://bellwethereducation.org/sites/default/files/Bellwether_ECECoaching_GHS__Final.pdf

PBS Kids. Retrieved October 11, 2020, from https://pbskids.org/

Preschool Education Program (PEP). (2018). Retrieved April 21, 2018 from http://www.montgomeryschoolsmd.org/departments/special-education/programs-services/preschool.aspx

Qualtrics. (2005). Provo, UT, USA. Retrieved from https://www.qualtrics.com

Romski, M., Sevcik, R.A., Barton-Hulsey, A., & Whitmore, A.S. (2015). Early intervention and AAC: what a difference 30 years makes. *Augmentative and Alternative Communication, Online.* 1-22. doi:10.3109/07434618.2015.1064163

Rev.com. Transcribe Audio to Text: Transcription Company & Website. (n.d.). Retrieved 01, October, 2020, from https://www.rev.com/.

Saldaña, J. (2013). *The coding manual for qualitative researchers*. Los Angeles: SAGE Publications.

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009-10). Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers. Journal of Research on Technology in Education, 42(2), 123-149.

Scholastic, Inc. Differentiated instruction: Children with special needs. (2015). *Scholastic Big Day for PreK,* 32-35. Retrieved November 27, 2017, from emea.scholastic.com/en/download/file/fid/1907

Senner, J. & Baud, M. (2016). Pre-Service training in AAC: Lessons from school staff instruction. *Perspectives of the ASHA Special Interest Groups SIG 12, 1*(2), 24-31.

Sennott, S.C., Crest, C., Fogarty, J.L., & Hix-Small, H. (2017). MODELER AAC coaching intervention with an iPad during shared reading and play in early childhood as multiple means of action and expression. *The Journal of Technology and Persons with Disabilities,* 270-286.

Showers, B., & Joyce, B. (1996). The evolution of peer coaching. Improving Professional Practice, 53, 12–16.

Taylor, M.W. (2012). Replacing the 'teacher-proof' curriculum with the 'curriculum-proof' teacher: Toward more effective interactions with mathematics textbooks. *Journal of Curriculum Studies, 45*(3), 295-321.

Tilborg, A.V., & Deckers, R.J.M. (2016). Vocabulary selection in AAC: application of core vocabulary in atypical populations. *Perspectives of the ASHA Special Interest Groups*, *12*(1), 125-138. Retrieved from https://www.researchgate.net/publication/312384804_Vocabulary_Seection_in_AAAC_Application_of_Core_Vocabulary_in_Atypical_Populations

Trembath, D., Balandin, S., & Togher, L. (2007). Vocabulary selection for Australian children who use augmentative and alternative communication. Journal of intellectual & developmental disability, 32(4), 291–301. doi:10.1080/13668250701689298

Tournaki, N., & Lyublinskaya, I. (2014). Preparing Special Education Teachers for Teaching Mathematics and Science with Technology by Integrating the TPACK Framework into the Curriculum: A Study of Teachers' Perceptions. *Jl. of Technology and Teacher Education, 22*(2), 243-259.

Workman, S. & Ullrich, R. (2017). Quality 101: Identifying the core components of a high-quality early childhood program. Center for American Progress. Retrieved from https://www.americanprogress.org/issues/earlychildhood/reports/2017/02/13/414939/quality-101-identifying-the-core-components-of-a-high-quality-early-childhood-program.

Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M., Espoinosa, L., Gormley, W.T., Ludwig, J., Magnuson, K., Phillips, D., & Zaslow, M. (2013). Investing in our future: The evidence base on preschool. Society for Research in Child Development, Washington, D.C..

Zangari, C. & Soto, G. (2011). Robust vocabulary instruction for children with AAC needs. [Powerpoint slides]. Retrieved from http://www.asha.org/Events/convention/handouts/2011/zangari-Soto/

Zoom.com: Video Conferencing, Web Conferencing, Webinars, Screen Sharing. (n.d.). Retrieved October 02, 2020, from https://zoom.us/

APPENDIX A

CURRICULAR NOTICING CHECKLIST

Teacher: SLP:

		Yes	No
1	Use of repository materials?		
2	Use of self-developed material?		
4	AAC use?		
5	Commenting/discussion on knowledge of students' strengths		
6	Demonstration of knowledge of students' needs		
7	Appropriateness of material for students		
8	Relevance of material to Big Day for PreK themes		

APPENDIX B

PRE-INNOVATION SURVEY

Q1 Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. This survey is part of a research study conducted through the Mary Lou Fulton Teachers College at Arizona State University to meet requirements of a Doctor of Education degree. It should take no more than 15 minutes to complete. Your participation is voluntary and you may skip questions you do not wish to answer; however, we hope that you answer as many as you can. No information collected under this authority may be used for any purpose other than the purpose for which it was supplied. Responses will remain anonymous and kept completely confidential.

Do you consent to participate in this study?

- ○ Yes (4)
- ○ No (do not continue) (5)

Q2 What is your role?

- ○ Teacher (1)
- ○ Speech-Language Pathologist (SLP) (2)

Q3 Do you work in one or more PSE classrooms?

- ○ Yes (1)
- ○ No (2)

Q4 How many years have you been a teacher/SLP?

_____

Q5 How many years have you been a teacher/SLP in PSE?

_____

Q6 What type of PSE do you work in? Choose all that apply.

- ☐ PSE- 5 hr (1)
- ☐ PSE- INC (2)
- ☐ PSE-Classic (3)
- ☐ PSE Pilot (4)
- ☐ PSE Collab (5)
- ☐ PSE Itinerant (6)
- ☐ Other (7) _____

Q7 What is the highest level of education you have completed?

- ○ Bachelor's degree (1)
- ○ One or more year of coursework beyond a Bachelor's (2)
- ○ Master's degree (3)
- ○ Specialist or certification based on coursework past a Master's degree level (4)
- ○ Doctorate (5)
- ○ Prefer not to say (7)
- ○ Other (6) _____

Q8 Do you use the Big Day for PreK curriculum in any capacity with your students?

- ○ Yes (1)
- ○ No (2)

Q9 I have sufficient knowledge about the Big Day for PreK curriculum.

- ○ Strongly Disagree (2)
- ○ Disagree (3)
- ○ Neither Agree nor Disagree (4)
- ○ Agree (5)
- ○ Strongly Agree (6)

Q10 The Big Day for PreK guide is a resource that helps me in my instruction/therapy.

- ○ Strongly Disagree (18)
- ○ Disagree (19)
- ○ Neither Agree nor Disagree (20)
- ○ Agree (21)
- ○ Strongly Agree (22)

Q11 I have various ways and strategies of developing my understanding of Big Day for PreK.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q12 I have sufficient knowledge about my students' strengths.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q13 I have sufficient knowledge about my students' needs.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q14 I have strategies for capitalizing on my students' strengths.

- ○ Strongly Disagree (79)
- ○ Disagree (80)
- ○ Neither Agree nor Disagree (81)
- ○ Agree (82)
- ○ Strongly Agree (83)

Q15 I have strategies for developing my students' areas of need.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q16 I have sufficient knowledge about augmentative and alternative communication (AAC).

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q17 I understand how to incorporate AAC into my instruction/therapy.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q18 I know how to solve my own technical problems.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q19 I can learn technology easily.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q20 I keep up with important new technologies for my PSE classroom(s).

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q21 I am familiar with using technology to deliver instruction/therapy using online learning.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q22 I have the technical skills I need to use educational technology.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q23 I know how to assess student performance with PSE students.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q24 I can adapt my teaching/therapeutic style based upon what students currently understand or do not understand.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q25 I can adapt my teaching/therapeutic style to different learners.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q26 I can use a wide range of teaching/therapeutic approaches in a classroom setting.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q27 I can assess student learning in multiple ways.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q28 I can adapt my teaching/therapeutic style to using online learning tools.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q29 I can select effective teaching/therapeutic approaches to guide student learning using AAC.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q30 I can choose AAC that enhances the teaching/therapeutic approaches for a lesson.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q31 I know about technologies that I can use for implementing Big Day for PreK online.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q32 I know about resources that I can use for increasing my understanding of and using AAC.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q33 I can choose AAC that enhances students' learning for a lesson.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q34 I can select effective teaching/therapeutic approaches to guide student learning in Big Day for PreK themes.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q35 I can choose Big Day for PreK materials that enhance students' learning for a lesson.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q36 I am thinking critically about how to use AAC with my students.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q37 I can adapt the use of AAC to different teaching/therapeutic activities.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q38 I can deliver Big Day for PreK curriculum content to my students using technology and online learning tools.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q39 I can do lessons that appropriately combine Big Day for PreK content, technology, and teaching/therapeutic approaches.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q40 I can provide leadership in helping others to coordinate the use of Big Day for PreK technologies and teaching/therapeutic approaches at my school and/or district.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q41 I have someone who appropriately models combining Big Day for PreK content, technologies, and teaching/therapeutic approaches in their work.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q42 In general, approximately what percentage of your education/professional development has provided an effective model of combining curriculum content with technology?

- ○ 25% or less (32)
- ○ 26% to 50% (33)
- ○ 51% to 75% (34)
- ○ 76% to 100% (35)

Q43 In general, approximately what percentage of your education/professional development has provided an effective model of combining curriculum content with teaching/therapeutic approaches?

- ○ 25% or less (65)
- ○ 26% to 50% (66)
- ○ 51% to 75% (67)
- ○ 76% to 100% (68)

Q44 In general, approximately what percentage of your colleagues and/or supervisors have provided an effective model of combining curriculum content with technologies and teaching/therapeutic approaches?

- ○ 25% or less (4)
- ○ 26% to 50% (5)
- ○ 51% to 75% (6)
- ○ 76% to 100% (7)

Q45 Is there anything additional you would like to share related to using technology with Big Day for PreK? Using online learning tools?

_____

_____

_____

_____

_____

APPENDIX C

POST-INNOVATION SURVEY

FOLLOW-UP SURVEY- ADAPTING BIG DAY FOR PREK IN REMOTE LEARNING

Q1 Thank you for taking time to complete this followup questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. This survey is part of a research study conducted through the Mary Lou Fulton Teachers College at Arizona State University to meet requirements of a Doctor of Education degree. It should take no more than 15 minutes to complete. Your participation is voluntary and you may skip questions you do not wish to answer; however, please answer as many as you can. No information collected under this authority may be used for any purpose other than the purpose for which it was supplied. Responses will remain anonymous and kept completely confidential.

Do you consent to participate in this study?

- ○ Yes (4)
- ○ No (do not continue) (5)

Q2 What is your role?

- ○ Teacher (1)
- ○ Speech-Language Pathologist (SLP) (2)

Q3 Did you work in one or more PSE classrooms in the 2019-2020 school year?

- ○ Yes (1)
- ○ No (2)

Q4 What type of PSE did you work in during the 2019-2020 school year? Choose all that apply.

- [ ] PSE- 5 hr (1)
- [ ] PSE- INC (2)
- [ ] PSE-Classic (3)
- [ ] PSE Pilot (4)
- [ ] PSE Collab (5)
- [ ] PSE Itinerant (6)
- [ ] Other (7) _____

Q5 Did you use the Big Day for PreK curriculum in any capacity with your students this year?

- ○ Yes (1)
- ○ No (2)

Q6 I am familiar with using technology to deliver instruction/therapy using online learning.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q7 I have the technical skills I need to use educational technology.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q8 I know how to assess student performance with PSE students through online modalities.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q9 I can adapt my teaching/therapeutic style for online learning based upon what students currently understand or do not understand.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q10 I can adapt my teaching/therapeutic style to different learners through online modalities.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q11 I can use a wide range of teaching/therapeutic approaches through online learning.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q12 I can assess/evaluate student learning through online modalities.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q13 I can adapt my teaching/therapeutic style to using online learning tools.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q14 I can select effective teaching/therapeutic approaches using AAC in online learning.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q15 I can choose AAC that enhances the teaching/therapeutic approaches for an online lesson.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q16 I know about technologies that I can use for implementing Big Day for PreK online.

- Strongly Disagree (4)
- Disagree (5)
- Neither Agree nor Disagree (6)
- Agree (7)
- Strongly Agree (8)

Q17 I know about online resources that I can use for increasing my understanding of and using AAC.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q18 I can choose Big Day for PreK materials that enhance students' learning for an online lesson.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q19 I am thinking critically about how to use AAC with my students.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q20 I can deliver Big Day for PreK curriculum content to my students using technology and online learning tools.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q21 I can do online lessons that appropriately combine Big Day for PreK content, technology, and teaching/therapeutic approaches.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q22 I can provide leadership in helping others use Big Day for PreK content and online teaching/therapeutic tools at my school and/or district.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q23 I have someone who appropriately models combining Big Day for PreK content and online teaching/therapeutic tools in their work.

- ○ Strongly Disagree (4)
- ○ Disagree (5)
- ○ Neither Agree nor Disagree (6)
- ○ Agree (7)
- ○ Strongly Agree (8)

Q24 In general, approximately what percentage of your education/professional development has provided an effective model of combining curriculum content with technology?

- ○ 25% or less (32)
- ○ 26% to 50% (33)
- ○ 51% to 75% (34)
- ○ 76% to 100% (35)

Q25 In general, approximately what percentage of your colleagues and/or supervisors have provided an effective model of combining curriculum content with technology?

- ○ 25% or less (4)
- ○ 26% to 50% (5)
- ○ 51% to 75% (6)
- ○ 76% to 100% (7)

Q26 Please select any resources from the Google Site that you used during remote learning. Check all that apply.

- [ ] Talking Core Board Google Slide- GoTalk 20
- [ ] Talking Core Board Google Slide- GoTalk 9
- [ ] Growing Vegetable Soup Adapted Google Slides
- [ ] Counting in the Garden Adapted Google Slides
- [ ] What Makes the Seasons? boy Adapted Google Slides
- [ ] What Makes the Seasons? girl Adapted Google Slides
- [ ] Am I Sick? Adapted Google Slides
- [ ] How Do Dinosaurs Get Well Soon? Adapted Google Slides
- [ ] Am I Safe? Adapted Google Slides
- [ ] Wash Your Hands Adapted Google Slides
- [ ] Growing Vegetable Soup Picture Cards
- [ ] What's the Weather Like Today Communication Board
- [ ] Nature Walk Cards/Board
- [ ] Weather Game Board
- [ ] PBS Kids Sesame Street Ready, Set, Grow with Abby and Elmo Game

- [ ] PBS Kids Sesame Street Seasons Spinner
- [ ] Owlie Boo: Flowers and Bugs Game
- [ ] Wash Your Hands Song and Video
- [ ] Hand Washing Hygiene 3 Step Sequencing
- [ ] Harry the Dirty Dog Sequencing
- [ ] My Five Senses PECS Adapted
- [ ] Vegetables Picture Cards
- [ ] Vegetable Aisle Picture Cards
- [ ] Healthy Choices Printable
- [ ] My 5 Senses Coloring Sheet/Activity Sheet
- [ ] When I Am Sick Social Story: Tummy Ache
- [ ] Bus Social Story- InterACT
- [ ] Bus Visuals for Behavior- InterACT
- [ ] Bus Communication Book- InterACT
- [ ] None of the above

Q27 What resources (from the Google Site or elsewhere) did you find most helpful during remote learning?

_____

Q28 Did you get any feedback from families/students about online resources you used?

_____

Q29 What would you like to see in the future for adapting PSE resources for online learning?

_____

APPENDIX D

PRE-INNOVATION SURVEY CONSTRUCTS

Construct Area	Survey Questions
AAC & Digital Tools (Technology) Knowledge	16, 18, 19, 22, 32, 33, 36
Instructional Knowledge	12, 13, 14, 15, 23, 24, 25
Curriculum Knowledge	9, 10, 11, 35
AAC & Digital Tools/Instructional Knowledge	17, 20, 21, 28, 29, 30
AAC & Digital Tools/Curriculum Knowledge	20, 31, 37, 38
Instructional/Curriculum Knowledge	26, 27, 34
AAC & Digital Tools/Instructional/Curriculum Knowledge	39, 40, 41

APPENDIX E

POST-INNOVATION SURVEY CONSTRUCTS

Construct Area	Survey Questions
AAC & Digital Tools (Technology) Knowledge	7, 17, 19
Instructional Knowledge	8, 9, 10, 12
Curriculum Knowledge	18
AAC & Digital Tools/Instructional Knowledge	6, 13, 14
AAC & Digital Tools/Curriculum Knowledge	16, 20
Instructional/Curriculum Knowledge	11, 15
AAC & Digital Tools/Instructional/Curriculum Knowledge	21, 22, 23

APPENDIX F

INTERVIEW QUESTIONS

1. How are you doing/dealing with everything that is going on?
2. How has it been to adjust to remote learning?
3. Tell me a little about the PSE classroom(s) you work in and the students you teach/work with.
4. Do you use the Big Day for PreK curriculum with your students? How?
5. Do you feel that Big Day for PreK meets your needs for instruction? What about the needs of your students?
6. Do you feel that the materials provided by Big Day for PreK are suitable to your needs in instructing students using AAC? Why or why not?
7. Did you download any materials from the shared website?
8. If yes, how did you use the materials? If no, why?
9. What was your experience in using the shared website?
10. Is there anything else you would like to share?

APPENDIX G

CODE BOOK-JEFFERSONIAN

Type of Code	Description
CONFIRM FILLER	Use of a confirming/affirming filler such as “you know” or “ya know”
DIRECT EYE CONTACT	Looks directly at screen/interviewer
EXHALE	Audible exhale
EYEBROW LOWER	Eyebrows go down/furrow
EYEBROW RAISE	Eyebrows go up
EYES WIDEN	Eyes get wider
FILLER	Use of a filler such as “um”, “I mean”, or “like”
GESTURE	Makes a gesture with hand(s) or head
HEAD NOD	Head nods up/down (as if saying “yes”)
HEAD SHAKE	Head shakes left/right (as if saying “no”)
HESITANT	Voice sounds unsure or says “I don’t know”
HESITANT LAUGH	Laughs slowly or nervously
INTONATION UP	Pitch increases/voice gets higher

LAUGH	Laughs in response to humor
LEANS BACK	Leans away from the computer
LEANS TOWARD SCREEN	Leans forward to the computer
PACING CHANGES	Slows down the pace of speaking or begins to talk quickly
SHRUG	Shrugs shoulders
SMILE	Smiles
SQUINT	Squints eyes

APPENDIX H

FREQUENCY TABLE EXAMPLE- JEFFERSONIAN

Code	Total	Min	Max	Mean	Std Dev	Bar Graph
CONFIRM FILLER	21	0	21	10.5	14.849	
DIRECT EYE CONTACT	19	0	19	9.5	13.435	
EXHALE	4	0	4	2	2.828	
EYEBROW RAISE	16	0	16	8	11.314	
EYEBROWS LOWER	2	0	2	1	1.414	
EYES WIDEN	2	0	2	1	1.414	
FILLER	35	0	35	17.5	24.749	
GESTURE	3	0	3	1.5	2.121	
HEAD NOD	19	0	19	9.5	13.435	
HEAD SHAKE	20	0	20	10	14.142	
HESITANT	2	0	2	1	1.414	
HESITANT LAUGH	7	0	7	3.5	4.95	
IMMEDIATE	4	0	4	2	2.828	
INHALE	3	0	3	1.5	2.121	
INTONATION UP	11	0	11	5.5	7.778	
LAUGH	7	0	7	3.5	4.95	
LEANS TOWARD SCREEN	3	0	3	1.5	2.121	
PACING CHANGES	8	0	8	4	5.657	
SHRUG	9	0	9	4.5	6.364	
SMILE	40	0	40	20	28.284	
SQUINT	6	0	6	3	4.243	
Total: 21	241					

APPENDIX I

FREQUENCY TABLE FOR ALL PARTICIPANTS- JEFFERSONIAN

Emotional Code	Participant 1	Participant 2	Participant 3	Participant 4
CONFIRM FILLER	21	28	77	21
DIRECT EYE CONTACT	19	19	19	21
EXHALE	0	0	2	0
EYEBROWS LOWER	0	1	1	0
EYEBROW RAISE	16	1	7	1
EYES WIDEN	2	1	2	6
FILLER	35	260	16	90
GESTURE	3	46	34	39
HEAD NOD	19	4	56	7
HEAD SHAKE	20	7	35	24
HESITANT	2	7	1	0
HESITANT LAUGH	20	3	3	3
INTONATION UP	11	5	1	0

LAUGH	7	19	17	8
LEANS BACK	0	2	0	1
LEANS TOWARD SCREEN	3	10	24	11
PACING CHANGES	8	2	4	2
SHRUG	9	2	21	11
SMILE	40	6	27	32
SQUINT	6	3	6	6

APPENDIX J

CODE BOOK- ECLECTIC

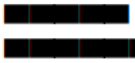
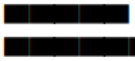
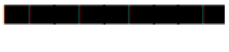
Type of Code	Description
AAC	Mention/related to augmentative or alternative communication tools
ACCOMMODATE	Staff member adjusting and accommodating to a student's/family's needs
ADJUSTMENT	Related to transitioning to new instructional style
COACHING	Staff member receiving coaching or coaching a family on strategies/
COLLABORATION	Collaborating with other staff members
COMMUNICATION	Communication with families and students
CURRICULUM	Discussion of Big Day for PreK/curriculum/instructional goals and objectives
DIFFICULTY	Describing a difficulty related to remote learning
DOCUMENTATION	Related to paperwork and documentation responsibilities
EMPATHY	Demonstrating empathy toward families, staff, or researcher
ENJOY	Taking pleasure in an activity or experience

EQUITY	Mention of resources, support, materials, etc. available for diverse families
HOPEFUL	Mention of having hope or positive outlook
INNOVATION	Mention of this project or staff member producing a new idea/strategy/resources
MATERIALS	Describing virtual or paper-based academic tools
ORGANIZATION	Mention of ways to prepare or organize remote learning
OVERWHELMED	Related to being overloaded, describing feelings of having too much to do
PARENTS	Discussion of families or parents
PARTICIPATION	Related to student participation in remote learning/attendance
REFLECTION	Reflective statement about how they are coping/managing
RESOURCES	Describing virtual websites/tools/apps available or the use of them
SUCCESS	A noteworthy accomplishment or positive experience in remote learning

TECHNOLOGY	Related to any type of technology- computer, internet, online tool
TIME-CONSUMING	Mention of something taking a significant amount of time
TRAINING	Training received from the school district or obtained from another staff member/department, including this project
TRANSITION	Changing to a new format or method
UNFAMILIAR	Describing unprecedented environment, tools, or methods
USEFUL	Mention of something that has been helpful or beneficial during remote learning
VENTING	Self-described “venting”
VIRTUAL	Mention of remote learning or a difference due to remote learning
WEBSITE	Discussion of Google Site made through innovation

APPENDIX K

FREQUENCY TABLE EXAMPLE- ECLECTIC

Code	Total	Min	Max	Mean	Std Dev	Bar Graph
AAC	11	11	11	11	0	
ACCOMODATE	7	7	7	7	0	
ADJUSTMENT	4	4	4	4	0	
COACHING	20	20	20	20	0	
COMMUNICATION	5	5	5	5	0	
DIFFICULTY	34	34	34	34	0	
DOCUMENTATION	5	5	5	5	0	
EMPATHY	8	8	8	8	0	
ENJOY	1	1	1	1	0	
EQUITY	6	6	6	6	0	
HOPEFUL	4	4	4	4	0	
INNOVATION	6	6	6	6	0	
MATERIALS	17	17	17	17	0	
MODEL	2	2	2	2	0	
ORGANIZATION	9	9	9	9	0	
OVERWHELMED	23	23	23	23	0	
PARENTS	43	43	43	43	0	
REFLECTION	3	3	3	3	0	
RESOURCES	19	19	19	19	0	
SUCCESS	3	3	3	3	0	
TECHNOLOGY	10	10	10	10	0	
TIME-CONSUMING	8	8	8	8	0	
TRAINING	1	1	1	1	0	
TRANSITION	3	3	3	3	0	
UNFAMILIAR	6	6	6	6	0	
USEFUL	8	8	8	8	0	
VENTING	2	2	2	2	0	
VIRTUAL	37	37	37	37	0	
WEBSITE	20	20	20	20	0	
Total: 29	325					

APPENDIX L

FREQUENCY TABLE FOR ALL FOUR PARTICIPANTS- ECLECTIC

Type of Code	Participant 1	Participant 2	Participant 3	Participant 4	**TOTAL**
AAC	2	11	1	9	23
ACCOMMODATE	0	7	5	0	12
ADJUSTMENT	9	4	9	0	22
COACHING	3	20	6	14	43
COLLABORATION	0	0	6	9	15
COMMUNICATION	4	5	5	2	16
CURRICULUM	5	0	3	4	12
DIFFICULTY	5	34	9	14	**62**
DOCUMENTATION	3	5	6	0	14
EMPATHY	3	8	1	0	12
ENJOY	0	1	0	0	1
EQUITY	2	6	1	3	12
HOPEFUL	4	4	4	0	12

INNOVATION	1	6	6	2	15
MATERIALS	2	17	3	21	43
ORGANIZATION	4	9	2	6	21
OVERWHELMED	1	23	8	0	32
PARENTS	8	43	15	28	**94**
PARTICIPATION	1	0	11	1	13
REFLECTION	2	3	1	2	8
RESOURCES	7	19	12	2	40
SUCCESS	3	3	4	12	22
TECHNOLOGY	3	10	11	8	32
TIME-CONSUMING	0	8	0	0	8
TRAINING	3	0	2	1	6
TRANSITION	5	3	2	0	10
UNFAMILIAR	4	6	1	1	12
USEFUL	4	8	8	3	23

VENTING	0	2	0	0	2
VIRTUAL	11	37	22	11	**81**
WEBSITE	4	20	10	2	36

APPENDIX M

HUMAN SUBJECT TESTING EXEMPTION

APPROVAL: MODIFICATION

Leigh Wolf
Division of Educational Leadership and Innovation - Tempe
-
Leigh.Wolf@asu.edu

Dear Leigh Wolf:

On 5/19/2020 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	Staff Coaching and Augmentative & Alternative Communication (AAC) Support with Big Day for PreK Curriculum
Investigator:	Leigh Wolf
IRB ID:	STUDY00011182
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• C Royster IRB - May 2020 Revised-.docx, Category: IRB Protocol;

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Christina Royster