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The Role of Family Members or Caregivers and Their Involvement in a Loved One's Usage of Augmentative and Alternative Communication in the Preschool Setting from the Perspective of an SLP

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The Role of Family Members or Caregivers and Their Involvement in a Loved One's Usage of Augmentative and Alternative Communication in the Preschool Setting from the Perspective of an SLP

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Abstract

Augmentative and alternative communication (AAC) can be used by an individual to supplement or support communication modalities when there is difficulty with verbal communication. ASHA, n.d.a delves further into the true meaning of AAC and defines the terminology of augmentative as adding to a person's spoken language and alternative as other methods used to produce verbal communication. The purpose of this research study was to explore the perceptions of speech-language pathologists (SLPs) concerning the involvement and/or role of caregivers or family members when their loved one is utilizing an AAC device for communication across the preschool setting. Four semi-structured interviews with SLPs were conducted, transcribed, and coded. Results revealed the successful implementation of AAC is influenced by four factors related to SLPs and other professionals, parents and/or caregivers, children, and available resources.

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Chapter I

Introduction

During the Fall of 2020, I had the pleasure of working with a three-year-old boy who had Angelman's syndrome. He communicated with gestures, facial expressions, and limited verbal communication. His parent's concerns for him included his not being able to properly utilize expressive communication with his peers during the preschool years. They ultimately did not want him to fall behind his other classmates due to his inability to verbally communicate quickly, effectively, and efficiently. The client's father was present during every session and sought treatment to assist his son and to learn ways to facilitate functional communication outside of speech therapy. Snap Core First with speech on an iPad mini was used throughout treatment sessions, to which the client easily adapted. He demonstrated the ability to request objects, use American Sign Language (ASL), and interact with a communication device across an initial evaluation along with four consecutive sessions before discharging.

The client's success was deemed to be, at least in part, due to his father's participation and involvement in his son's speech therapy. During the first course of scheduled treatment, the client's father was unsure of how to navigate the augmentative and alternative communication (AAC) device. However, he supplied the clinicians with comprehensive questions, listened to their professional guidance, and implemented strategies in the home setting, which helped his son immensely. The family was contracted to bring the AAC device home for 30 days and incorporate into the client's daily activities such as communicating with peers and family, operating an Alexa device, or requesting to interact with certain activities. Between the introduction of the AAC device and the second treatment session, the client's father improved significantly with the overall use of the device. As the sessions progressed, he was able to "take

over" and independently deliver strategies such as modeling, verbal prompting, and verbal cueing to his son without the assistance of the clinicians during the allotted time. The client's father discussed with the clinicians his learned communication strategies throughout their time in speech therapy. Then, he expressed gratitude as they enabled him to facilitate improved functional communication with his son outside of therapy. Ultimately, this progressed his son's abilities and strategies, developed growth, and resulted in discharging of speech therapy after four sessions. This client demonstrated improvement in his direct selection abilities with each session. Overall, he became more comfortable with the device, navigated it with ease, and utilized it outside of therapy across multiple settings, according to his father. This would not have been possible if our client's father was not as involved in his son's usage of AAC across multiple environments and incorporated targeted strategies and practice outside of therapy.

Everyone deserves to have a voice to communicate their wants, needs, and desires with their intended communication partner(s). The Communication Bill of Rights lists fifteen statements highlighting the significance of providing communication rights to individuals with disabilities, regardless of severity, throughout their daily activities. The list includes the right to:

1. interact socially, maintain social closeness, and build relationships
2. request desired objects, actions, events, and people
3. refuse or reject undesired objects, actions, events, or choices
4. express personal preferences and feelings
5. make choices from meaningful alternatives
6. make comments and share opinions
7. ask for and give information, including information about changes in routine and environment

8. be informed about people and events in one's life

9. access interventions and supports that improve communication

10. have communication acts acknowledged and responded to even when the desired outcome cannot be realized

11. access functioning AAC and other AT (assistive technology) services and devices at all times

12. access environmental contexts, interactions, and opportunities that promote participation as full communication partners with other people, including peers

13. be treated with dignity and addressed with respect and courtesy

14. be addressed directly and not be spoken for or talked about in the third person while present

15. have clear, meaningful, and culturally and linguistically appropriate communications (Brady et al., 2016).

Communication is typically exchanged through verbal or nonverbal modes with a communication partner to convey an intended message. Nonverbal communication can include facial expressions, gestures, eye contact, ASL, written notes, posture, or pointing to objects (Buck & VanLear, 2002). In contrast, verbal communication is an exchange of spoken language between communication partners to direct an intended message to the receiver (McDuffie, 2013). When an individual communicates with little to no verbal expression, language can be supplemented, not replaced, with the incorporation of AAC. The goal of AAC is to provide individuals the opportunity to "efficiently and effectively engage in a variety of interactions and participate in activities of their choice" (Beukelman & Light, 2020, p. 9), rather than camouflage communication deficits with technology (Beukelman & Light, 2020). Effective execution of an

AAC tool can allow one to take the adequate steps necessary for them to express themselves with other intended communication partners across multiple environments.

Parent involvement is not a discrete checklist that must be met for a child to be successful in their communication abilities with an AAC device. However, participation from the caregiver or parent can be shown through the asking of questions, bestowing a burning curiosity, and demonstrating techniques learned in therapy across numerous environments their loved one partakes in (Bailey et al., 2006). For instance, involvement from a caregiver might be used to facilitate functional communication at home, at the grocery store, or in the car. Further, the preschool setting could represent an additional setting, which would require communication between multiple professionals to ensure all communication partners of the AAC user are understanding and in agreement with recommendations. Without caregiver or family involvement, the child could potentially present delays and retrograde with the material that has been learned in therapy as the duration and frequency of treatment may not be sufficient for the child to succeed. Advocating for an individual's right to communicate is vital to their success (Biggs et al., 2019). "Having the power to speak one's heart and mind changes the disability equation dramatically. In fact, it is the only thing I know that can take a sledgehammer to the age-old walls of myths and stereotypes and begin to shatter the silence that looms so large in many people's lives" (Light & McNaughton, 2014, p.27).

Statement of the Problem

The problem explored in this study was the degree to which the family member or caregiver is involved in their loved one's usage of AAC in the preschool setting. The root of the issue stems from the concept that lack of involvement can overall stall success in and out of the classroom and ultimately can lead to system abandonment (Ballin et al., 2011). Users of AAC

often rely heavily on other team members to facilitate the development of appropriate communication across everyday environments (Beukelman & Light, 2020). These individuals may include, "family members, AAC facilitators, educational/vocational professionals, healthcare professionals, friends, members of the community, and the broader social system that defines cultural values, policies, and accepted practices" (Beukleman & Light, 2020, p.148). It is essential for their involvement to guarantee successful interactions with intended communication partners, overcome potential barriers, and allow these individuals access to participate in meaningful opportunities (Beukelman & Light, 2020). Incorporating external involvement with the usage of AAC helps guide the user, set the gold standard as to what the expectation should be, and establishes leadership by example outside of the therapy setting.

Buy-in and active participation from all team members, including the client and their family members, is essential to increase the likelihood of successful implementation of AAC (Bailey et al., 2006). Technology abandonment or unsuccessfulness with the device may occur if satisfactory involvement is not obtained. Johnson, Inglebret, Jones, and Ray conducted a research study in 2006 to interpret long-term success versus abandonment of AAC practices. There were 275 ASHA Special Interest Division (SID) #12 members who participated in answering a 106- question survey addressing success versus abandonment. Results included, "the mean percentage of those who successfully used one or several AAC systems for more than 1 year was 39.35%. The mean number of those who inappropriately abandoned their AAC systems was 28.68%. These numbers included both high-tech (electronic or computerized) and low-tech (non-electronic) systems. A combination of the two percentages accounted for 68.04% of all those who were using AAC. Apparently, 31.96% were neither considered successful with their systems nor did they abandon their systems" (Johnson et al., 2006, p. 90).

Importance of the Study/ Purpose

The purpose of this research study was to explore the perceptions of SLPs concerning the involvement and role of caregivers or family members when their loved one is utilizing an AAC device for communication purposes in the preschool setting. Additionally, the study gathered insight from the viewpoint of the SLP regarding the expectations of family members or caregivers for the successful implementation of the communication device across multiple environments.

Research Question

The original research questions for this study were *What role do caregivers or family members currently play in the implementation of AAC* and *What is the significance of family member or caregiver involvement in a loved one's usage of AAC?* However, as is sometimes found in qualitative research, through the process of constant comparative analysis of the data, the participants revealed that the true research question addressed was (from the perspective of an SLP) *What are the factors related to the successful implementation of AAC with preschool children?*

In order to address this question, this study used a qualitative phenomenological design.

Significance of the Study

As stated above, the data from this study can be used to guide SLPs in their understanding of the role family members or caregivers play (or could play) in the successful implementation of AAC with their children. Without exploring this topic, it is difficult to adequately address the problem of the non-acceptance rate of AAC. The research study was conducted in pursuit of identifying the significance of the caregiver or family member involvement and relaying the importance for the sake of the child's success. This information

may be beneficial to future SLPs interacting with the family members and professional team to develop an understanding of the significance of caregiver involvement with children at the preschool age or younger. Further, additional studies may be completed with other professionals such as special educators or classroom teachers to gather their input regarding parent or family member involvement. The next chapter will include a review of the literature on the topics addressed throughout the research study.

Chapter II

Review of the Literature

Introduction

This chapter provides a review of previous research studies conducted in relation to factors and services influencing speech and language development, usage of AAC in the preschool setting, and parent and/or caregiver involvement throughout facilitation techniques. The American Speech-Language-Hearing Association (ASHA), (n.d.b) defined Early Childhood Intervention as services to individuals experiencing developmental delays or disabilities to promote speech and language development; these services are provided under federal law to individuals ranging from birth to three, however, can continue to age five if necessary. SLPs closely interact with family members regarding cognitive, communicative, physical, self-help, sensory, social-emotional, and adaptive skills. The program is tailored to begin services as soon as possible and involve family members in prioritizing their needs as well as the child's. Training and education are provided to the parents regarding the utilization of multimodal communication.

Early intervention services can be provided in multiple settings. Two of the most common settings are through Early Childhood Special Education (ECSE) programs or Head Start. According to (Hanline et al., 2018), research supports that communication in infants, toddlers, and preschoolers with developmental disabilities has been enhanced by the utilization of AAC throughout ECSE services. These services are free and are provided to individuals if they are eligible and fall within the age range of birth to five-years-old in the state of Minnesota. ECSE services provided in the early stages of speech and language development in relation to AAC can be linked to the facilitation of improved methods of functional communication across

multimodal communication strategies. Proper education and training for the ECSE providers is crucial for those engaging with the device for successful outcomes.

Head Start, funded by the federal government, is an alternate service provider for low-income families in the United States. Head Start is designed to be a tool to produce successful outcomes in school, including social and emotional development, language and literacy, health, and family well-being (Wymbs et al., 2021). Services are offered for eligible individuals from the ages of birth to age five, including settings of foster care, public centers, and in the child's home (Benefits.gov, n.d.). Early Head Start programs are available to pregnant women and impoverished families to aid infants and toddlers in the development of their speech and language (Benefits.gov, n.d.). Parents are heavily engaged and contribute to program decisions to involve and educate them in the development of their child to establish and foster parent-child relationships (Office of Head Start, n.d.). Because of the previously mentioned importance of parental involvement, the remainder of this literature review will provide insight toward the development of successful caregiver involvement in the implementation and usage of AAC in the preschool setting. Of specific interest are the role of the caregiver in language development, intervention, facilitation and intervention techniques, and implementation of AAC across functional settings.

Overview

Caregiver Roles in Language Development

Caregiver engagement is an important factor in a child's language development and their success with speech-language therapy (Melvin et al., 2020). Engagement, within this context, is described as overall involvement (e.g., attendance, participation in intervention, and completing homework) and investment of families, in terms of emotional and attitudinal involvement

(Melvin et al., 2020). Early childhood is a crucial stage in a child's life for developing language (Zauche, 2016). During this time, children learn skills that are needed to speak and understand language. "Research suggests that neural networks for language acquisition are present before birth and the children begin to learn language in utero, suggesting that infant's brains are primed to learn language" (Zauche, 2016, p. 319). Parents and caregivers are among the first teachers of their children, to successfully find ways to interact with their child, which is a priority within treatment and can lead to feelings of empowerment within their relationship with their child (Romski et al., 2011).

Although many parents may have concerns about their child's development, they may lack the resources necessary to access services. The family's income, maternal age, marital status, and education were found to impact the quality of insurance (or lack thereof) the family has, and the quality of health services the child may receive, including those sufficient to identify a developmental delay (Marshall & Kirby et al., 2016). The parent's or caregiver's economic status and financial standing may also indicate their availability to be involved in the intervention process. Parents not being able to be present for intervention was one of the biggest barriers to their involvement with treatment (Melvin et al., 2020). Most speech-language pathologists (SLPs) believe that attendance is the biggest indicator of success in therapy (Pappas et al., 2008).

AAC Explanation

Augmentative and alternative communication (AAC) can be used by an individual to supplement or support communication modalities when there is difficulty with verbal communication. ASHA (n.d.a), delves further into the true meaning of AAC and defines the terminology "augmentative" as adding to a person's spoken language and "alternative" as other methods used to produce verbal communication. The exact form this takes is dependent on the

individual utilizing the communication device, however, the person may use AAC over a short period of time (e.g., recovering from surgery) or for an extended period of time (e.g., a lifetime) (ASHA, n.d.a). Furthermore, AAC can take the form of no-tech, low-tech, mid-tech, or high-tech. No-tech AAC devices can refer to the use of sign language, hand gestures, facial expressions, or pointing to different letters. Low-tech AAC strategies use pictures in the form of cards, charts, boards (picture exchange communication system, also known as PECS), writing, or books to aid in communication strategies. Mid-tech AAC devices provide basic communication functions via battery-operated electronic devices such as buttons (e.g., Big Mack), switches, or displays (e.g., GoTalk). Otherwise, technology can be implemented via high-tech options, which include using a form of technology such as an application on an iPad to communicate via pre-recorded icons to convey a message of meaning to their intended communication partner (ASHA, n.d.a). It is common for individuals to use multimodal communication, or a combination of no-tech strategies when communicating with others. For instance, a client might utilize sign language in addition to a high-tech AAC device. Lastly, an effective AAC system is personalized and tailored to the individual's communication needs, as everyone has different ways of portraying their messages (ASHA, n.d.a). Two examples of how the configuration of AAC might differ are that a geriatric client who suffered a cerebral vascular accident (CVA) with limited verbal output and gross motor skills may utilize an eye gaze device but a pediatric client with autism spectrum disorder (ASD) may benefit from use of sign language in addition to verbal output to enhance functional communication.

Multiple factors must be considered when developing an augmentative and alternative communication system to best fit the child's communication needs. According to Marshall and Goldbart in 2008, first, the child's skills related to current communication, cognitive, and motor

abilities must be analyzed. Then, external influences including professional expertise and services, family feelings, and financial support can influence the intensity of the communication device (e.g., no-tech, low-tech, mid-tech, or high-tech). Lastly, yet most importantly, the article discussed the importance of parent involvement toward the child's success with the desired method of AAC chosen from assessment throughout the intervention. Utilization of a family-centered approach seeks to provide family and caregiver training, education, involvement in the decision-making process, and facilitate communication between both parties to ensure the child and family's needs are being met. Marshall and Goldbart (2008), further suggested knowledge of the family's cultural background, such as primary language, socioeconomic status, and religion, can positively aid the SLP toward successful implementation of the communication system. This can be followed through in intervention services by play-based activities, language, socialization, and viewpoints on communication disabilities and professionals assisting those individuals (Marshall & Goldbart, 2008). The next section of the literature review will address intervention regarding the caregiver roles in language development, facilitation and intervention techniques, and implementation of AAC across functional settings.

Intervention

Caregiver Role in Intervention

SLPs believe it is essential for caregivers to be properly educated, trained, and aware of developmental milestones; this is to ensure the proper advancement of fine and gross motor skills, social skills, language, and cognition (Mohammed, 2020). Developmental delays can occur when a child does not reach these skills during the period expected when skills are compared to individuals of the same age (Marshall & Kirby et al., 2016). Developmental delay and caregiver concern can occur at any age or income level and can be present in any racial or

ethnic background (Marshall & Kirby et al., 2016).

ASHA (n.d.c), provided the typical receptive and expressive developmental milestones for infants and children from the ages of birth to five-years-old. The typical receptive language development of an individual from birth to three months includes smiling to familiar voices, quieting to familiar speakers, and reacting to loud sounds. The child should be able to convey information about basic needs by crying, begin to make cooing sounds, and begin to smile at familiar individuals. Babies ranging from 4 months to 6 months old are typically able to respond to toys with noise, move their eyes toward sounds, recognize changes in vocal tone, begin to laugh, babble and coo during play-based activities, and create sounds for various emotions. Infants from the age of seven months to 12 months should be able to play games, listen to songs, comprehend simple words, recognize and turn to their own name, begin to use gestures, show objects by pointing, and have their first words emerge (ASHA, n.d.c). Children who are one-year-old to two-years-old should be able to understand and ask simple questions, point to objects or pictures being targeted, follow simple one-step directions, begin to put two words together, and have many new words emerge. The typical language development of two-year-old to three-year-old children includes being able to follow two-step directions, easily comprehend new words introduced, distinguish simple opposites, ask "Why" questions, begin to put three words together, and grasp simple prepositions (ASHA, n.d.c). Three-year-old and four-year-old children begin to understand family words, simple concepts, simple pronouns, certain plurals, respond to their name from another room, put four words together, and ask "When" and "Why" questions. Lastly, the typical language development of four-year-old and five-year-old individuals includes being able to comprehend order words, time words, code switch, follow longer multi-step directions, name numbers and letters, tell short stories, and hold conversations

(ASHA, n.d.c).

Facilitation and Intervention Techniques

According to Pappas et al., 2008, 98% of SLPs emphasized the need for caregiver involvement, especially relating to the preparation of intervention techniques, which typically result in successful outcomes. The relationship between the SLP and the caregiver is crucial to ensure a mutual understanding of the child with late language emergence in comparison to peers and their developmental milestones (Marshall & Coulter et al., 2016). Incorporating parental perspectives and engagement about their child's current language abilities into assessment and treatment plans has proven beneficial for patient outcomes (Marshall & Harding et al., 2017).

Implementation of Desired AAC into Functional Settings

Beukelman and Light in 2020 stated, "Communication is not an end goal in and of itself; rather, it is an essential tool by which individuals achieve their educational, vocational, health, community, social, and personal goals. Therefore, AAC interventions should focus on actual communication performance within real-life contexts" (p.97). Their treatise further elaborated on the significance of treatment assisting the complex communication needs of the individual throughout daily life such that communicating wants and needs, contribution to social etiquette practices, trading information, and development of social closeness is made accessible to their intended communication partner. According to Beukelman and Light (2020), successful implementation of intervention skills and strategies ought to take place in natural settings, as this will ultimately lead to the generalization of the desired skill(s). Lastly, the research of Beukelman and Light (2020) stressed the importance of intervention to "ensure that 1) targeted strategies and skills are valued by the individual, family, and community; 2) targeted strategies

and skills are, in fact, generalized to real-world use; and 3) they make a positive difference in real-world functioning" (p. 97).

Family Involvement

This section of the literature review will focus on the data from a combination of studies involving the perceptions of speech-language pathologists and parent, or caregiver, input about the importance of family involvement. This information provides insight related to the roles of the SLP and the parents in a loved one's usage of AAC across various settings.

SLP Perspective of Family Involvement

A single-case multiple probe design study conducted by Douglas, Biggs, Meadan, and Bagawan (2021) unveiled the importance of complete family collaboration regarding a loved one's usage of a high-tech communication device. Douglas et al. (2021) strongly encouraged the generalization of assistive technology into daily routines facilitated by typical communication partners as the device alone is not satisfactory toward delivering intended results. The participants in the study included a four-year-old with complex communication needs operating a speech-generating device and her four additional family members consisting of mom, dad, sister, and brother (one brother did not meet qualifications due to age restrictions). The study involved training and coaching all family members from the SLP via telehealth services. This was conducted throughout intervention services to execute aided language modeling of the device throughout naturalistic routines in the child's environment. First, families were deemed qualified if they had a child between ages four and eight, who had acquired a speech-generating device in the previous six months. Families were also required to have four or more family members, who were above the age of eight years old for training purposes. Finally, a parent was required to complete the Communication Matrix to identify the communication skills of the child to

determine if they fell at the unconventional communication, conventional communication, or concrete symbol level (Douglas et al., 2021).

There was no previous modeling or training provided to the family members prior to the study occurring. Further, the study was completed in the target child's home with each family member paired to formulate across four separate dyads. Tele-based training and tele-based coaching were provided via HIPAA-compliant Zoom platform. *Prepare, Show, Wait, and Respond* was the aided language model provided by each family member to the target child across targeted activities including storybook reading (mom), snack time (dad), singing (sister), and playing with cars (brother) (Douglas et al., 2021). An iPad was provided to the family to facilitate data collection, modeling at home, and completion of training and coaching strategies. Measurements were obtained at the stages of baseline, intervention, and maintenance, which were conducted once every two weeks following intervention services. Results obtained from the study found a relationship between the implementation of aided language modeling provided by family members and the intervention model of combined training and coaching (Douglas et al., 2021). Variability was present via the rate of aided language modeling provided by each individual family member, observed independent communication of the target child, and the observed rate of speech generated device by the target child. Nevertheless, there was a mean increase in both the child's behaviors within the study, indicating that the study was socially valid. In conclusion, the research completed by Douglas et al. (2021) highlighted the effectiveness of "whole family" intervention via tele-based training and coaching model to facilitate increased high-fidelity models through aided language modeling in the home setting.

In a study conducted by Thistle and McNaughton in 2015, a pre-test-posttest design was completed to study the effects of teaching active listening skills to pre-service speech-language

pathologists to help them establish a relationship with parents of young children who use AAC to communicate. Participants included 26 graduate students in their 2nd year of studies at a northeastern university; however, due to technical errors with the participant's videos, data was only available for interpretation for 23 (one Hispanic female and 22 European American) females ranging from the ages of 22 to 28 years old. There were eight communication partners, six females and two males, who simulated the role of the parent of a child utilizing an AAC device. The age range of the partners was between 27 and 43 years old, all had a background in special education with 2 to 8 years of experience, and six were European American, one was African American, and one was Asian American (Thistle & McNaughton, 2015).

In this study, the interactions with pre-service SLPs and communication partners consisted of different members throughout the research study (Thistle & McNaughton, 2015). During the pretest period, graduate students served as the licensed SLP, and the communication partners acted as the parent. Next, they interacted in a collaboration simulation that was scripted to express parental concerns about their child's usage of AAC. Following the pretest, the graduate students were educated on the use of the LAFF (L-listen, empathize, and communicate respect, A- ask questions, and ask permission to take notes, F-focus on the issues, F-find a first step) strategy and shown how to model and rehearse prior to completion of the posttest in two days. The posttest was then completed using a new scenario and communication partner. Scenario topics facilitated throughout the collaboration simulation included 13 topics with the discussion of specific parent requests or concerns (Thistle & McNaughton, 2015).

The experiment continued with the pre-service SLPs observing their pre-test and post-test interactions and responding to five open-ended questions. The questions targeted recommendations of the LAFF strategy, benefits and disadvantages of the strategy, situations

where the strategy might be useful, and changes to their own performance throughout the posttest instruction. Seven parents were prompted to watch the pretest and posttest of the pre-service in randomized order. These seven mothers were found in the age range of 40 to 69 years old and had children currently using AAC between the ages of 8 to 30 years old. Parents were then asked to determine which video demonstrated stronger communication skills and elaborate on the positive behaviors and negative behaviors exhibited by the SLP in each video (Thistle & McNaughton, 2015).

Three major themes arose throughout the study related to participant benefits. This included structure of the strategy, increasing preparedness and confidence during the collaboration simulation, the collection of comprehensive information, and that the LAFF strategy allowed the individuals to demonstrate an interest in their communication partner. Overall, 20 out of 23 students recommended training for other pre-service SLPs to be offered in future settings. Possible disadvantages noted by the pre-service SLPs included decreased naturalness of conversation throughout interactions, longer meetings due to length of detail, and that the strategy takes time and effort to learn. A total of 105 comments (76 positive, 29 negative) were made by the parents with more positive comments regarding the posttest videos using the LAFF strategy (43 compared to 33) and more negative comments about the pretest videos (18 compared to 11). Further, results indicated collaborative relationships with SLPs and family members are crucial for successful results and families play an essential role in the advancement of communication skills of their child who uses AAC (Thistle & McNaughton, 2015). This study illustrated the importance of utilizing active listening skills as parents often described dissatisfactions within their relationships with communication professionals. However, there is still a need for further organized instruction and research to indicate the best instructional

approach for pre-service SLPs and SLPS to use (Thistle & McNaughton, 2015).

Lastly, an article organized by Cynthia Cress, Ph.D., CCC-SLP in 2004 highlighted the importance of a family-centered approach to guide the successful implementation of AAC services. Cress (2004) stated, "The goal of family-centered AAC intervention is to meet the communicative and social needs of children and their families as well as possible, by addressing the interaction between the child, partners/family, and environment" (p. 51). Cress (2004, Table 1) elaborated on the common viewpoints between communication professionals and parents throughout AAC intervention. Both included shared feelings regarding helping the child communicate their needs, feeling knowledgeable regarding the child's skillset, wanting their opinions to be valued, seeing results throughout the intervention, being responsible for facilitating improved communication skills with the child, and wanting to utilize simplistic techniques due to time constraints. Further, both sides expressed *negative concerns with limited patience, frustration at times*, and *the possibility of having guilty feelings if the child's communication does not improve.* Parents are great observers of their children and can provide information regarding their expressive language impairments, therefore the SLP must prioritize family wants and needs during AAC intervention (Cress, 2004). The research developed five different scenarios and responses where the SLP can potentially foster support in future interactions, which included *Scenario 1: You're so much better than me at communication; Scenario 2: Nothing recommended gets implemented; Scenario 3: Different estimates of a child's skills; Scenario 4: My child doesn't do anything to communicate; and Scenario 5: He's going to talk*. Lastly, this peer-reviewed study indicated the importance of achieving effectiveness in intervention by prioritizing family goals during AAC intervention, complimenting the child's abilities rather than their limitations, working to improve one skill at a time, and continually

developing common ground with the family. Small progress is still progress (Cress, 2004).

Family Perspective of Family Collaboration

In 2008, McNaughton, Rackensperger, Benedek-Wood, Krezman, Williams, and Light published an article that addressed a study collecting parents' input regarding the benefits and challenges their child has faced when using an augmentative and alternative communication device to communicate. The authors began by highlighting the significance of active family member involvement in the intervention team to strengthen educational development and promote effective outcome measurements for the child. The researchers also commented on the lack of insufficient research, regarding family members' insight into the process of learning how to apply AAC to daily interactions. Further, the slogan, *"Nothing about us without us"* led to the intent of the study, indicating, that those involved in the usage of AAC would be included such as family members and the person using the AAC device (McNaughton et al., 2008, p. 44). Participants met the requirements by being a parent of an individual having cerebral palsy from the age of six to 30 years old who had speech characteristics that were unable to fulfill daily communication needs, which resulted in the need for high-tech AAC devices (e.g., Dynavox 3100, the Pathfinder, and Liberator) to communicate with partners. An internet Listserv known as Augmentative Communication Online User's Group (ACOLUG) recruited the seven individuals through online postings. Informed consent was obtained prior to the study (McNaughton et al., 2008).

A focus group methodology was performed with a modified approach via a virtual password-protected internet bulletin board system known as Phorum 3.3.2. An individual using AAC led the focus group and took the position of the moderator. The nine-week study was composed of 11 questions related to content learned, characteristics of the learner, nature of the

coaching, and type of evaluation used. Additional questions were formulated concerning the process and the recommendations for professionals toward learning to use AAC. Participants engaged in the online discussion board and informal responses to other participants were established in accordance with the study. A letter was sent to participants roughly eight weeks after the study to member check and add additional information. All participants declined as the information was relevant (McNaughton et al., 2008).

Five-step data analysis involved unitizing participant contributions, organizing data into a table, coding themes, assigning a numeric code to the unitized data, and completion of a reliability check (McNaughton et al., 2008). Five themes arose from the data including *AAC device selection, knowledge and skills needed to use AAC, barriers to learning AAC, teaching the individual,* and *educating society*. The participants in the study stated barriers to learning how to operate and incorporate AAC included a lack of trained professionals, challenges in supporting ongoing use of the device, challenges in promoting communication in the community, and the cost of learning. Further, the participants suggested there was potential to increase facilitation by using techniques such as independent exploration, imaginary play, structured drill and practice with the device, training and education with family members, learning from other AAC users, manufacturer training and assistance, and technical support such as icon prediction. Further, the authors (McNaughton et al., 2008) emphasized the significance of educating other parents or family members on appropriate communication techniques and responding to negative reactions an AAC user might encounter. Participants offered advice to professionals by stating that it is important to be sensitive to the certain needs of the AAC user and family members and to understand the basic functions of an AAC device so that other individuals can be trained. Likewise, participants advised parents to advocate for their loved ones using the AAC device by

taking a leadership standpoint with services and becoming an expert in AAC technology and instructional programs. One parent stated this was essential for him in the assessment and decision-making process with his daughter using an AAC device, even when the professionals disagreed (McNaughton et al., 2008).

Parents often fill multiple roles when advocating for their child in AAC intervention. To reduce parent frustrations in the AAC intervention process, the participants of the study suggested a need for improved training for professionals across three areas:

1. Training is essential at the pre-service level and in-service level (continuing professional development)
2. Efficient use of varied evidence-based practices should be utilized by professionals toward development of communication skills in individuals who use AAC
3. Pre-service and in-service training should be provided to professionals delivering AAC intervention to enhance skills necessary for successful collaborative efforts (McNaughton et al., 2008).

Lastly, efforts by both professionals and family members were deemed essential toward a child's success in the utilization of a communication device. The professionals involved in AAC intervention must trust their parents and family members, provide relevant and current information about AAC services, and communicate with one another for services to be effective. The participants of the study have demonstrated significant contributions toward AAC services to enhance their child's ability to communicate throughout daily functional activities. The final statement of the article revealed, "A commensurate willingness by education and communication professionals to work as part of a team will ensure that children with complex communication needs receive the 'chance to succeed' that they deserve" (McNaughton et al., 2008, p. 54).

Fäldt, Fabian, Thunberg, and Lucas completed a qualitative study conducted in 2020 to elaborate on the parent perceptions of the ComAlong Toddler early intervention program. The ComAlong Toddler intervention program's intended target audience was parents of children who are one to three years old and are undergoing the beginning stages of diagnostic procedures for communication difficulties. In this study, two home visits were initially completed. The first visit consisted of an SLP informally assessing each child throughout their home environment with the implementation of coaching and training of strategies. The second served as a follow-up involving responsive communication techniques (e.g., Enhanced Milieu Teaching (EMT) and AAC), discussing future intervention, and making referrals as indicated. Group sessions followed with discussions about parents' perceptions toward their AAC experiences and continued modeling and training in aided AAC. Home assignments were also provided for parents. One year following the trained intervention, semi-structured telephone interviews were conducted in Swedish to gather information about the parent experiences regarding the effectiveness, outcomes, viewpoints, and the need for possible improvement related to ComAlong Toddler intervention. Purposive sampling was completed via the sending of an informative letter to the 16 families who participated in the trained interviews and the intervention. Upon qualitative content analysis completion, four major categories arose including *development for us and the child, acquiring useful tools, useful learning strategies,* and *benefits and challenges regarding intervention structure.* Overall, findings from the literature depicted the parents involved in the study as grateful for the support from early parent-focused interventions. They found the combination of individual and group-based intervention to be beneficial in addition to the video-recorded home assignments. Further, the parents described increased self-confidence in their continued use of responsive communication, EMT, and AAC. However, parental comments

emphasized the need for a desired family-centered approach via improved insight toward obstacles and a forgiving atmosphere for their children to learn in. Further qualitative research is warranted on parent perceptions of the potential burden of parenting an individual with complex communication needs or reduced attendance by parents in intervention (Fäldt et al., 2020).

Another study by Marshall and Goldbart in 2008 was organized in Britain to examine parent perspectives of their child currently using or beginning to use AAC and the impact on family interactions and communication. The qualitative research study utilized eleven semi-structured interviews to gather data pertaining to their parent and family viewpoints and experiences. Participants were recruited through schools. The qualifications for the study were having a child aged three to 10 years old with a non-progressive and congenital disability, being a current user or expected to use AAC, and reporting that their speech was not the primary form of communication. Nine of 11 children discussed in the study had cerebral palsy, six had intellectual disabilities, one with epilepsy, and two with hearing impairments. Each child utilized two to five methods of communication via British Sign Language, Signalong, high-tech communication, Picture Exchange Communication System (PECS), or a communication board according to parental report (Marshall & Goldbart, 2008).

The interviewer was a teacher and an SLP and psychologist were the researchers in the study. Interviews were recorded, transcribed, and verified by the interviewees. A six-stage thematic analysis was utilized to develop three global themes made of organizing themes and thematic networks in accordance with the data. Child's communication and interaction, parents' views and experiences, and wider societal issues were the three global themes that emerged from the qualitative data. Parent views and experiences consisted of six organizing themes involving *the parent as the expert, decision making in AAC, parental feelings and emotional responses,*

reflections on communication, views on services, and *demands on parents.* The participants in the study had a widespread knowledge of their children regarding communication abilities and limitations across settings. However, they expressed they often feel fatigued, isolated, guilty, and frustrated, upon taking the responsibility as the additional interpreter for their child using AAC, dealing with the financial pressures in obtaining a device, and coping with the possible limitations that may arise due to insufficient time (Marshall & Goldbart, 2008).

The research suggested future professional development with practitioners was needed to facilitate positive strategies in respondence to understanding and supporting parents who are experiencing negative feelings in their child's usage of AAC. Practitioners are currently unable to alleviate the financial burden regarding the cost of a communication device, however, it is critical they are aware of and acknowledge the feelings of parents or family members to avoid withdrawal from the AAC device. Every individual and their family member is distinctive, and intervention must be individualized to meet their desired wants and needs. The research conducted confirmed parent involvement is vital toward the presentation and execution of AAC. Literature involving parental participation in AAC intervention is increasing, however, conclusions are varied amongst the data collected insisting further research be conducted (Marshall & Goldbart, 2008).

A qualitative study completed by Bailey, Parette, Jr., Stoner, Angell, and Carroll in 2006 employed six semi-structured interviews with family members to determine their perceptions about factors that impacted the use of AAC as a primary method of communication. The article defined 'family centered' as a model that ensures all members are involved in the decision-making process of effective AAC and are respected and comfortable in the collaborative partnership amongst one another. Recruitment of participants was carried out in purposive

sampling of junior and high school students who used AAC for communication purposes. Informed consent was gained prior to the study of the primary care providers of seven male youths exhibiting moderate, severe, or multiple disabilities. Three of seven AAC users used low-tech devices (e.g., switches to access voice output, visual schedules, and picture communication boards) and the remaining four accessed high-tech devices (e.g., recorded voice output, Windows-type format, and touch screen abilities). Participants were prompted to answer a series of questions regarding their utilization of the AAC devices across their home and school settings. Analyzation of the interviews was via cross-case analysis with line-by-line coding. Member checking and respondent validation were included within the framework to enhance the credibility of the data obtained (Bailey et al., 2006).

Four categories emerged from the various themes complied from the existing data, which included *family expectations*, *facilitators of AAC use*, *perceived barriers to effective AAC device use*, and *benefits.* First, the category of *family expectations* involved the impact of the AAC device on the AAC user and interactions with the AAC team members. Second, the codes that addressed *facilitators of AAC use* were composed of effective teaming and the ease of AAC device use. Codes from the third category, *perceived barriers to effective AAC device use* included ineffective teaming, inadequate training, limitations of the AAC device, and no symbolic communication of the AAC user. Lastly, the category of *benefits* was composed of codes related to increased independence and communicative competence of the AAC user (Bailey et al., 2006).

The results examined various factors regarding parental perceptions, specifically, support received from the experts administering treatment toward AAC users and family members. The families expressed their gratitude for the time, support, and relationship developed from the

incorporation of a family-centered approach within therapeutic techniques. Bailey, et al. (2006), determined that establishing suitable AAC for a child, family concerns, priorities, and communication needs must be considered by all team members collaborating with the family members. This can often lead to improved trust and further develop expectations for involvement in the collaboration of team members. Every family member involved agreed upon this viewpoint: "If time is a vital component of family-professional collaboration that is recognized by professionals *and* families, then time for home-school collaboration should be supported" (Bailey et al., 2006, p. 58). Further research is warranted regarding the training and education of parents, family members, primary caregivers, and professionals administering AAC facilitation techniques, enhancement of AAC across settings, improvement in AAC portability and reliability, and establishment of team member responsibilities, roles, and relationships (Bailey et al., 2006).

A mixed-methods study conducted by Johnson, Inglebret, Jones, and Ray in 2006 provided data from a three-phase investigation designed to interpret long-term success versus abandonment of AAC practices. Phase 1 consisted of a focus group devised of 11 SLPs in both rural and urban areas with 6 to 25 years of experience to construct a list of factors related to successful use of AAC over a long-term period versus abandonment of the AAC system. Phase 2 consisted of three focus groups made of 17 members with 1 to 30 years of experience. The SLPs that were selected to participate in the study arise from multiple settings in hospitals, schools, birth to three programs, university clinics, private practices, and universities. Each focus group in Phase 1 and Phase 2 gathered for 90 minutes with a moderator, facilitator, and two note-takers. Participants were recorded via audiotape regarding their responses to two open-ended questions, which included:

1. What factors influence the long-term success of augmentative and alternative communication (AAC) systems in multicultural contexts?
2. What factors influence the abandonment of augmentative and alternative communication (AAC) systems in multicultural contexts?

Lastly, in Phase 3, one thousand surveys were randomly delivered to supporters of the ASHA Special Interest Division (SID) #12, (AAC) located in the United States and District of Columbia (Johnson et al., 2006). Further, these individuals had previously contributed to the focus group conversations that were not SID #12 members. Five volunteer SLPs constructed a 106-element questionnaire derived from each of the three phases consisting of 103 closed-ended and three-open-ended questions. Of the 106 questions, 41 focused on long-term success whilst the remaining 62 questions focused on the abandonment of the AAC system. There were 275 questionnaires returned, with 6 being unfamiliar with AAC. This resulted in 269 questionnaires that were successfully completed with no more than 11 unanswered items (missing data) (Johnson et al., 2006).

Results from the study were illustrated in six tables via the following categories:

Table 1: SLPs' years of experience with AAC, including across various settings;

Table 2: Means, standard deviations, and ranges relating to client success with and abandonment of AAC systems;

Table 3: Mean percentage of cases and standard deviations for the top 20 factors for long-term success;

Table 4: Mean percentage of cases and standard deviations for the top 20 factors for inappropriate abandonment;

Table 5: Factor analysis results for questions regarding long-term success;

Table 6: Factor analysis results for questions regarding abandonment (Johnson et al., 2006).

Conclusions were drawn from descriptive and factor analysis was completed throughout the study. Results specified that the long-term success of AAC systems can be related to Support (e.g., family, team members, technology specialists), System Characteristics and Fit (e.g., child's abilities and selected AAC system, custom characteristics, and general system characteristics), and Attitude (e.g., ownership, value, and being realistic). Likewise, these same characteristics were rated by participants to potentially lead to inappropriate abandonment (Johnson et al., 2006). Other negative factors included lack of training (e.g. user and partners, no time, partner conversational techniques, or operation or system programming) or adjusting the system and not maintaining (e.g., lack of time, no opportunity for use, or lack of ongoing adjustments). Furthermore, research suggested the need for additional investigation elaborating on direct input from all stakeholders involved in AAC practices rather than strictly the SLP to ultimately gain better insight (Johnson et al., 2006).

Biggs, Therrien, Douglas, and Snodgrass in 2022 conducted a national survey of SLPs utilizing telepractice during the COVID-19 pandemic to provide services toward aided AAC intervention. The study explored SLPs and their perspectives regarding the effectiveness and proficiency of telepractice services offered to individuals using aided AAC from the ages of three to 21 years old during the COVID-19 pandemic. Participants of the study were recruited via email and electronic flyers and had to meet strict qualifications including being a licensed SLP in the United States and having used services via telepractice to provide treatment to one or more individuals from 3 to 21 years utilizing aided AAC during May and June of 2020. There were 463 individuals who had access to the survey, however, 331 participants met the necessary requirements and were eligible for the study. Further, 95% of participants were female, the

average age was between 40.2 years, 89% of the participants were white, 66.2% were school-based, 8.5% of participants had prior experience with telepractice services, and 44 of the 50 states across the United States were represented in the sample (Biggs et al., 2022).

The participants completed a survey consisting of 218 closed- and open-ended questions based on their personal characteristics, the characteristics of their current caseload, their utilization of telepractice during the early stages of the COVID-19 pandemic, the effectiveness of AAC intervention via telepractice, and the possibility of continuation of services via telepractice. Participants most often reported their experiences via a 5-point Likert scale; however, they were able to respond to open-ended questions regarding the challenges, advice, or additional comments regarding AAC intervention via telepractice. Qualitative data was interpreted using qualitative content analysis and used the inductive coding process throughout three different cycles. Results were characterized into three categories from the perspective of the SLP including *use of AAC telepractice during the COVID-19 pandemic, perceived effectiveness and plans to continue or discontinue AAC telepractice,* and *factors influencing the perceived effectiveness of AAC telepractice* (Biggs et al., 2022).

Of the SLPs studied, 52% reported involvement and availability of parents and family members in AAC to be critical factors toward the child's success. One SLP stated telepractice services often lead to success when "the caregiver is willing to participate and do what it takes" (Biggs et al., 2022). However, the participants acknowledged that telepractice services can overwhelm family members as they are trying to coach, model, and learn new skills to further develop their child's. Parents of children receiving services in the school-based setting were twice as likely to report low satisfaction with services and the family-service provider relationship in comparison to other families who received services in non-school-based settings

(Biggs et al., 2022). Further research must be completed to understand the barriers. The research strongly emphasized the significance of family and provider training, coaching, and collaboration through telepractice to incorporate aided AAC into naturalistic settings. Lastly, one of the implications derived from the research highlighted the significance of partnership with parents and families to form a collaborative connection with consideration of parent values, opinions, needs, goals, and preferences to foster achievement amongst individuals with aided AAC. Further, SLPs reported improved communication and participation of family members throughout the use of telepractice services during the early stages of the COVID-19 pandemic (Biggs et al., 2022).

Additional Resources Supporting Family Involvement

An additional study conducted by Biggs, Carter, and Gilson in 2019 completed a scoping review of the literature regarding the AAC user's communication partner and their role in modeling AAC interventions. Literature was reviewed over five databases of studies where participants had to meet the requirements of being a natural communication partner (e.g., peer, educator, or parent), used an experimental single-case or group design, participants were 21 years or below, had complex communication needs, and utilized aided AAC, measured the expressive language outcome of the child, and were peer-reviewed and published in English. Abstracts were assessed for relevance across 1,699 articles. Next, the remaining 336 relevant articles were screened for eligibility. There were 26 studies that met the criteria with an additional three selected from ancestral and forward searches. Ultimately, 29 studies were selected. In the 29 studies, 134 children were selected to participate with the majority of individuals having ASD; other disorders included developmental delay, intellectual disability, multiple disabilities, orthopedic impairment, and other communication disorders (e.g., apraxia of

speech (CAS)). Experimental single-case designs were utilized across 27 studies with the remaining two using group designs. Over 100 adult and peer communication partners were found to have implemented AAC interventions within the examined research. The research found oral instruction, modeling, practice or application opportunities with performance feedback, and role-play or rehearsal were applied most frequently to facilitate intervention strategies amongst communication partners. Further, the study revealed communication partners benefitted from simultaneous support when learning to apply AAC intervention strategies (e.g., coaching, facilitation, consultation, follow-up support). Participation in education and training of intervention techniques for natural communication partners can significantly influence a child's success when using or implementing aided AAC across settings.

The data from Biggs et al. (2019) suggested that communication partners (both peers and adults) did not perform modeling preceding targeted instruction in accordance with modeling intervention strategies at baseline. This suggested communication partners may not have had the knowledge base as to how or why several methods of modeling can be utilized with aided AAC. Further, preintervention training and concurrent support were extremely beneficial for communication partners when carrying out intervention strategies. Future research is warranted toward consistent aided AAC modeling intervention such as outcome measurement, quality of report, and application following implementation training (Biggs et al., 2019).

Conclusion

The literature suggests family and caregiver involvement in a loved one's usage of augmentative and alternative communication is a critical component of the child's success regardless of age, setting, or cultural background. Most often, parents have expressed frustration with the lack of training and education provided by the professional team, the lack of interaction

in the decision-making process, and the need for them to take on numerous roles throughout the intervention process. However, parents and family members viewed themselves as critical members of the intervention team in addition to collaboration from the professional to facilitate improved communication of the child using AAC (McNaughton, 2008). Likewise, there appeared to be a disparity between training, support, and education to guide parents and families in providing adequate AAC intervention techniques across various ages of the individual utilizing AAC and environments (Biggs et al., 2019).

A comprehensive review of the literature has revealed that there is limited research confirming the SLP's perspective of the parent and or caregiver involvement in a loved one's usage of AAC in the preschool population. Therefore, further research is warranted considering the topic using a qualitative method research design. The next chapter will elaborate on the specific methodology and procedures that were applied throughout the research project.

Chapter III

Methodology and Procedures

The purpose of this chapter is to provide a rationale for the specific methodology that was used in this research study, describe qualitative research in general, identify the participants and how they were selected, and explain how data was interpreted and analyzed.

Qualitative Research

Qualitative researchers believe investigator perceptions, opinions, and biases must be understood to completely interpret the findings (Creswell, 2015). Descriptive data can be obtained from interviews, observations, or document analysis to clearly state the purpose behind the study (Creswell, 2015). Creswell and Guetterman (2019) elaborated on the exquisiteness, detail, and purpose of qualitative research with the following statement: "In qualitative research, we see different major characteristics at each stage of the research process: exploring a problem and developing a detailed understanding of a central phenomenon; having the literature review play a minor role but justify the problem; stating the purpose and research questions in a general and broad way so as to include the participants' experiences; collecting data based on words or images from a small number of individuals so that the participants' views are obtained; analyzing the data for description and themes using text analysis and interpreting the larger meaning of the findings; writing the report using flexible, emerging structures and evaluative criteria; and including the researchers' subjective reflexivity and bias" (Creswell and Guetterman, 2019, p.26).

This research study followed the framework of a qualitative research design. This type of research was deemed most appropriate for this study as the purpose was to explore, interpret, and identify the meaning of the experiences each SLP has had related to family or caregiver

interaction and involvement, or lack thereof through semi-structured interviews (Merriam, 2009). Merriam (2009) and Delve (n.d.) stated these interviews can include a combination of open-ended and closed-ended questions or semi-flexible questions to deeply understand the participants' viewpoints on the desired topic and allow for an individual to go "off-script". However, prior to the interview process, Taylor and Bogdan (1998) highlighted the significance of building rapport with each participant to learn and determine what was most remarkable to them as professionals and the correlation to the field of speech-language pathology. Further, this research study followed the framework of a phenomenological qualitative research design.

Phenomenology

The methodology that was utilized throughout this study was a phenomenological research design. Donalek (2004) stated, "Unless we acknowledge our already meaning-endowed relationships with the topics of our research, we are deluded about grasping the essence of any phenomenon" (p. 516). Donalek (2004) further explained, 'The researcher's thoughts, responses, and decision-making process should be acknowledged and explicated throughout the entire research process" (p. 516). This framework was appropriate for this particular research study as the intention of the study was to gather participants and gain information through observations and interviews to appreciate and better understand their professional experiences, beliefs, and perspectives on the research topic (Creswell & Guetterman, 2019). The most beneficial way to gather this type of data was through semi-structured interviews to collect subjective data that could be further interpreted as themes.

Negotiating Entry

The student researcher gathered contact information from a speech-language pathologist previously employed by MSUM. The email contained a description of the research study and an

invitation for those who may qualify to participate. The email stated to contact the researcher via email to schedule a date and time for the interview. A gatekeeper was established utilizing this method, therefore, providing additional contact information to gather the remaining participants of the research study.

Participants

Prior to beginning the research study, Institutional Review Board (IRB) approval was granted, and all procedures of the study were approved. Participants were then selected via snowball sampling with the gatekeeper. Using this technique, the researcher identified one speech-language pathologist who was interested in participating in the study (Griffith et al., 2016). This SLP was then asked to recommend additional potential participants. Target participants included SLPs who had experience working with children from birth to five who used AAC as a tool for expressive communication. An email containing information referencing the study and requesting participation was then sent to each potential participant. All interviews were conducted using a HIPAA-compliant Zoom platform, as this was the preference of the participant, to ensure confidential material was protected.

Data Collection

Data was collected through individual in-depth, semi-structured interviews with four SLP participants from the upper Midwest during the fall months of 2021. As previously stated, the interviews were completed via HIPAA-compliant Zoom platform. All interviews were recorded via Zoom and MP3 Recorder for interpretation of results later. Interviews were an appropriate and effective method for gathering professional, subjective in-depth information from the participants to elaborate on personal experiences for this particular research study (Creswell & Guetterman, 2019).

Methods of Validation

Member checking and audit trails were utilized to validate the data collected in this study. The use of these techniques also improved the accuracy, reliability, and credibility of the data (Iivari, 2018). Each participant was provided with a transcription of their interview. Member checking was completed following the interview process and shared with the participants to allow for critical analysis to confirm or deny the interpreted results.

Data Analysis

The responses to the open-ended research questions were analyzed, interpreted, and coded to determine themes in a structured manner using lean coding (Creswell & Guetterman, 2019). Following lean coding, responses were grouped into categories and analyzed for themes. Lastly, a final assertion was developed to answer the research question. The results of the research study were obtained during the fall months of 2021, allowing ample time for analysis and interpretation. The following sections will elaborate closely on the specific procedures chosen.

Data Exploration. The researcher contacted each participant to organize a convenient time for them to participate in an interview. The four in-depth, semi-structured interviews were then completed with each participant within their desired time frame. Following the interviews, the Zoom and MP3 recordings were both used to transcribe the interviews word-for-word via software applications called Rev and Trint. Both applications provided audio and video transcription of the recorded interviews. To confirm that the interviews had been transcribed accurately, the researcher compared the participants' responses with the Zoom recordings. Further, edited transcriptions were performed to reduce redundancy and were revised for clarity (Delve, n.d.). Each of the four transcriptions was reviewed and read through numerous times

prior to the assignment of codes to completely enhance understanding and full comprehension of the data obtained during the study.

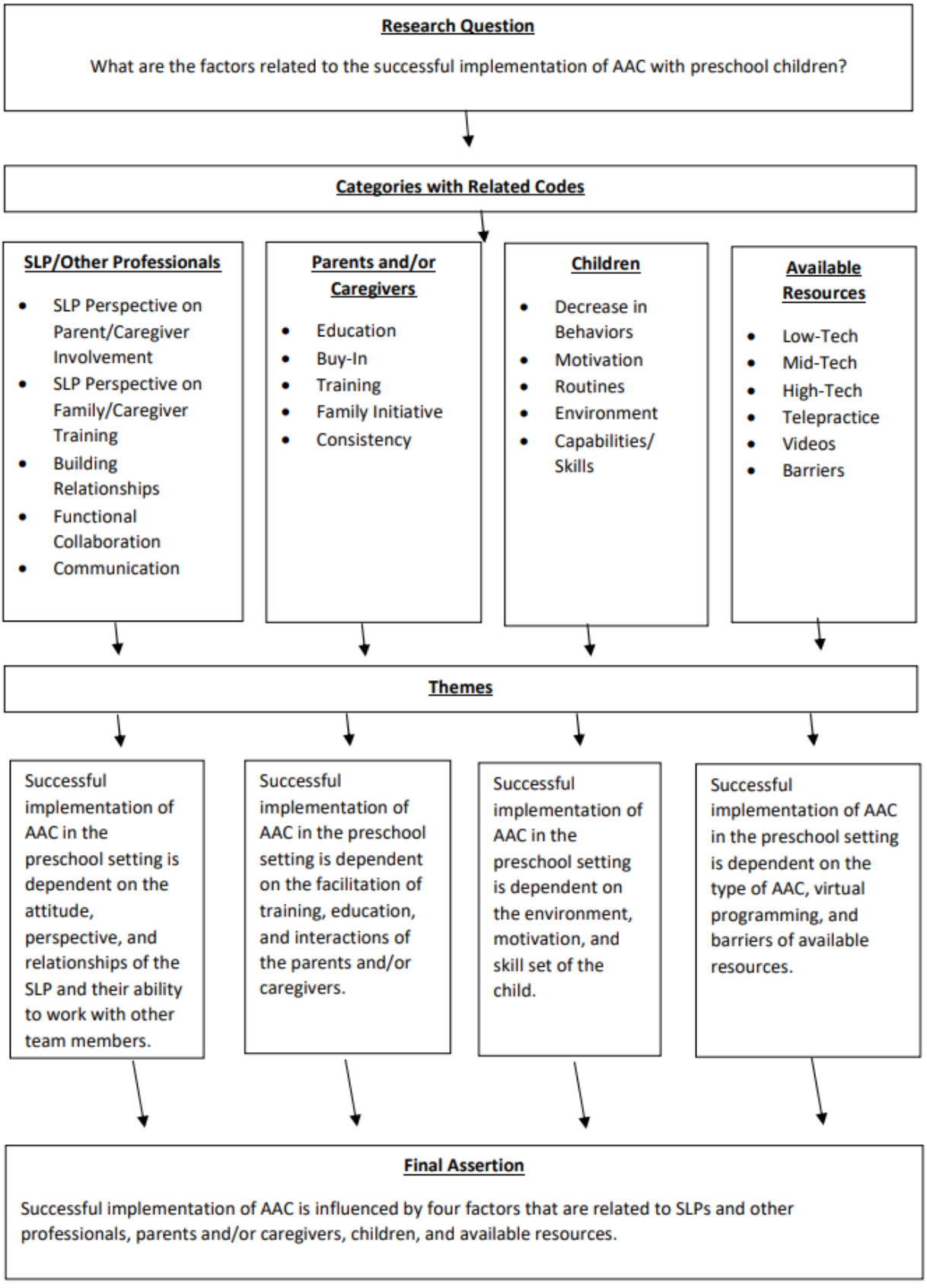
Code Identification. Creswell and Guetterman (2019) stated there are no strict procedures when coding a transcript, however, they provided their audience with six steps outlining the process. These steps were utilized during this research project.

First, the authors strongly suggested their audience carefully read each transcript several times and create notes based on initial findings. Next, they suggested choosing one transcript, based on personal preference (e.g., length or interest of document, etc.) to answer the overarching question, "What is this person talking about?" (Creswell & Guetterman, 2019, p. 244). The codes revealed from this process are the basis for the initial coding of each subsequent transcript. The third step described by Creswell and Guetterman (2019) utilized lean coding of the initial codes. Lean coding was used to narrow down the total number of codes. The fourth step was to search for redundant codes used throughout the transcripts to further decrease the total amount of codes. The fifth step included reviewing all codes to establish categories. New codes emerged and former codes were eliminated during this step. Following the completion of lean coding, categories were created from the codes. The codes were then grouped into categories to identify the main ideas present within the data. The sixth and final step of the process was to assign themes to each category based on the data. This step further established major ideas within the research (Creswell & Guetterman, 2019). The themes were statements derived from the categories that also accurately depict the codes within the categories.

Data analysis in this project included one additional step beyond those suggested by Cresswell and Guetterman (2019). A final assertion statement summarizing all the themes, categories, and codes was developed to provide an answer to the research question. Figure 1, a

flowchart of categories with related codes, themes, and the final assertion, was included to provide a visual representation of the data.

Figure 1.
Flowchart of Categories with Related Codes, Themes, and Final Assertion



The next chapter will delve into the results that were obtained throughout the research project.

Chapter IV

Results

The purpose of this research study was to explore the perceptions of SLPs related to parent and caregiver involvement in a loved one's usage of AAC to answer the question, *What are the factors related to the successful implementation of AAC with preschool children*? To meet this purpose, semi-structured interviews were conducted with four speech-language pathologists. An analysis of the data revealed four categories, four themes, and one final assertion. The following sections will present the data related to the major themes as well as the categories and codes that emerged from the data throughout the semi-structured interview process.

Theme One: Successful implementation of AAC in the preschool setting is dependent on the attitude, perspective, and relationships of the SLP and their ability to work with other team members.

Category One: SLP/Other Professionals

The first category to emerge from the data was, *SLP/Other Professionals*. This category included the following codes: *SLP Perspective on Parent/Caregiver Involvement, SLP Perspective on Family/Caregiver Training, Building Relationships, Functional Collaboration, and Communication.*

SLP Perspective on Parent/Caregiver Involvement. Each participant described parent and caregiver involvement in terms of their loved one's usage of AAC and agreed it to be crucial toward the individual's success in and out of the classroom. Three of the four participant responses are included in the following statements:

Kate described her belief it has been beneficial to address parent involvement in

simplistic terms:

"…Yes, I do think it is crucial and I think it needs to be layered so it's not overwhelming. And start with things that are family-oriented, even if it's just playing a card game or where the individual can say 'your turn'. That it is very important for them to be involved, but we can't overwhelm them because there is so much out there. Keep things simple and functional so that the flow goes. Otherwise, we just get kickback from the parents, and then we don't get any assistance."

Sally commented on the variability and qualities of the caregivers to facilitate parent involvement:

"…Yeah, so I think it really varies. Mainly just being open and willing to seek out and try new things is how I would describe it in a nutshell."

Finally, Louise expressed AAC intervention simply would not be possible without parent involvement:

"…You have to have parents involved. It's just the parent coaching model that is built-in. The littles I work with would not be able to do any of it on their own. The more involved, the more interests, the more participation you can get from the parent, the better."

SLP Perspective on Family/ Caregiver Training. Kate defined the term, "involvement", as being "hands-on" as an important component of training. She further expressed providing techniques such as modeling while parents and family members are observing for facilitation in the absence of her presence:

"…I would say hands-on. Parents are engaged when I am there working with the student so they can see how I'm doing it and that they can mimic what I'm doing during the day when I'm not there. Also being engaged with finding when it's most appropriate to use the

device to get its most use and make it functional because I don't want it sitting in a corner and kids pressing buttons. But finding times within their routines at home, where it can be a successful opportunity for the parent and the child to engage together."

When discussing whether Louise thought caregiver training should be mandatory, she stated:

"*…No, I don't because I think they're putting in enough. Well, I should say for my age group. Littles, because if you start implementing that, parents wouldn't do it right… I think for my littles trying to make it as simple and easy for the parents to implement as I can. And once I get them hooked and build on that is much more beneficial than maybe making them go through a certification kind of thing."*

Building Relationships. Data collected throughout the research study highlighted the significance of creating relationships with parents and family members to facilitate improved communication and involving these members in the intervention process.

For example, Kate stated:

"…I think the main thing is building good relationships with your parents, your caregivers, and listening to their needs. Listening to their highs and listening to their lows. Asking them 'What went well this week?', 'What didn't go well this week?', and placing them in the driver's seat and have them in the right direction of where to go from here."

Sally discussed that she had found the development of creating a relationship with each family was beneficial during direct therapy. She described her personal experiences and addressed benefits during the COVID-19 pandemic:

"…I think having those opportunities to connect with families. That's one thing that is

more of a struggle, probably in this setting where you don't always have the opportunity to do that. COVID was a strange year where we got to see what it's like, to have school, but also to have the parents so much more involved in what we were doing directly. I think any opportunity to get parents involved like that is definitely key."

Functional Collaboration. The participants stated that the professionals they have worked closely in the past with have included nursing, occupational therapy, physical therapy, dieticians, behavioral professionals, teachers, special education teachers, physicians, caregivers, and siblings.

Kate discussed her previous experiences with individuals who were at home due to the risk of high illnesses. Specifically, she elaborated on her personal experience regarding collaboration with nursing staff:

"*…I work with their nursing staff to use the device during the day to maybe alert the nurse, use the device in the morning with the kids when their siblings are getting ready for school, or coming home from the bus setting up situations. The sibling who is at home due to health conditions, they can participate when their siblings are coming and going."*

Similarly, Sally discussed the important role staff play:

"…I think carry over with other staff is huge. Sometimes it's getting buy-in and showing them why it's important, showing them what they can do with it, and also gathering ideas from staff such as how to program a device, asking them what they are seeing that the individual is gravitating toward, or what they have noticed the individual is trying to communicate about in different situations…. Brainstorming with a parent and asking what's really motivating for their child, what are some things that they are wanting to communicate about, or asking what they are seeing at home? We can then ask ourselves;

'How can we build on the child's communication attempt?' or 'What's going to work best for the family?'"

Monica specifically noted the importance of the classroom teachers:

"...Teachers for sure because they really have to carry it over. I'm not in the class the entire time. The teachers really have to be the ones, making sure it's being implemented. In the past, we've had siblings do the recording for the kids using their voice, so that they could have a child's voice on their device at school. Usually, we take the parent's input for what kind of vocabulary they want at home. And to be honest with you now with Proloquo2Go, a lot of the parents were learning how to do it, programming their own pages."

Further, she stated:

"...I think it helped the private practice and we just contacted each other more often and maybe we're more on the same page."

Communication. This code was discussed as it pertained to the SLP, other professionals, and family members. Sally expressed hosting a discussion with parents and caregivers to discover what works best for the family members in terms of meeting their child's needs:

"...Involvement from the beginning, so maybe in the trial process, if you're looking at different switches. Or even brainstorming with a parent and asking, 'What's really motivating for your child?', What are some things that they're going to want to communicate about?', or 'What are you seeing at home?' where they are trying to make those communication attempts already. As SLPs, how can we build on that? I think finding out what's going to work for the family."

Sally explained parents know their children best and observe them in situations where the

SLP is unable. Further, incorporation of AAC into daily routines will be viewed as less daunting to the caregivers:

> *"…Parents have to be invested in it and be open. Maybe that's kind of a key behavior for family and caregivers, to have that openness and willingness to explore different things. But beyond that, I think it's our job to communicate those possibilities and work with them and problem solve with them to show them what AAC can do for their student."*

Finally, Monica expressed the need for improvement in communication strategies between the SLP and family members. She further stated the COVID-19 pandemic aided in the facilitation of improved communication skills.

> *"…Sometimes I think communication could be stronger because now so much is provided that we have Jumpstart settings or collaborative preschool settings. We don't do as many visits in the home as we used to. Although I feel like during COVID that really helped to do more virtual meetings."*

In sum, the participants in the current study strongly believed that the attitude, perspective, and relationships of the SLP and their ability to work with other team members is crucial to the successful implementation of AAC in the preschool setting.

Theme Two: Successful implementation of AAC in the preschool setting is dependent on the facilitation of training, education, and interactions of the parents and/or caregivers.

Category Two: Parents and/or Caregivers

The second category entitled, *Parents and/or Caregivers*, discussed the many factors significant to these individuals when being involved in AAC. Specific codes that emerged from the data included: *Education, Buy-in, Training, Family Initiative, Interactions, and Consistency.*

Education. All participants found education provided to the parent or caregiver to be

incredibly influential for their loved one in the facilitation of numerous techniques for targeted practice across multiple settings.

For example, Kate discussed the significance of sharing the language development and knowledge base of the SLP with the parent or caregiver:

> *"…Educating the parents on development is another big thing in letting them know where their child should be- This is what they're saying. This is what we should do when they respond this way. We've studied the development. They haven't studied the development. Giving them that education and understanding of where their child should be. Asking, 'Where are they at now?' and 'What kind of things can we do to get them to the next level to close that gap?'"*

Sally shared her experience in providing parent education to a mother elaborating on her daughter's picky eating habits to facilitate improved functional communication with AAC:

> *"…If she's a picky eater, she might not be that motivated in general to communicate. And then, it was interesting hearing her parent's expectations of what they thought was going to happen where she might seek out pictures and then seek out parents to tell them what she wanted without them having to prompt her through that. We had a discussion about her having access to all of her snacks without having to ask for them. So, learning more about why that wasn't the right fit at the moment for them at home."*

Louise elaborated on her personal experiences in granting each parent a specific task assigned to the child to facilitate functional communication. Every parent interacts differently with their child and discussed assignment of activities to that parent with the child in which she provided the statement:

> *"… I'm giving them- OK, that's your activity that only you get to do with them."*

Monica explained an experience where she provided education toward the child's goals in targeted therapy, which ultimately increased his mother's understanding and further increased the facilitation of targeted practice at home.

"…He's talking about the farm animals and then skipping to a descriptor page and learning how to jump from that. After explaining to the mom, what we were targeting, she started practicing at home. And it really, obviously, that made a difference."

Buy-In. All participants agreed parents and caregivers must accept and participate in the targeted goals during speech therapy for it to be effective for the family and child.

Kate provided her reasoning on the significance of buy-in:

"… Well, they have to buy into it to what's done and the reason for it being done. If they don't see it or something, or that it's going to be beneficial to their child then I don't think they'll buy-in. If it's too complicated, they're not going to buy in and follow through. And then some families go, they want to go out and get the best thing out there the most and sometimes the most expensive thing out there, and it's just not appropriate."

Sally stated the following:

"… I think just getting that buy-in right away is. Is really important… Buy in first is kind of more on my end, I guess, and showing them what some of the options are and showing those small successes, being excited about that, and sharing that. Because then I think maybe those family and caregiver behaviors will come when they see just how powerful this (AAC intervention) can be and what their child can do when given the right tools."

Louise believed the incorporation of education and examples to be critical for the family to buy-in:

"… You really have to convince them that they're (AAC) going to be useful and that they

will help the child. Some parents are on board right away. Even so, for the parents, that aren't as onboard right away, I try and suggest cutting the label off or saving the package of their favorite fruit snacks and offering them choices between the fruit snacks and the goldfish... Explaining to parents or getting them to buy into how important these are. They're not toys, and they're not flash cards. Sometimes takes a couple of visits."

Louise also asserted that:

"... Other behavior that's effective is parents that are involved that are interested in getting their child to talk, that they don't want them to need services when they get to kindergarten, and I wouldn't say it's across all socioeconomic groups. You have parents that are in the higher economic groups that are like, 'Oh, he'll be fine.' And then, the same thing in the lower socio-economic groups… It really is dependent on how the parents feel about that. We see a lot of parents that maybe struggled themselves in school, and I feel like those parents are highly motivated. Because they don't want their child to have to go through what they went through."

Monica described a personal story in which buy-in from the family occurred following three years:

"... I remember one family we worked with them for three years and that was in the infant stage. I think the child was two when we started using picture symbols and the dad was like, 'No, I don't want those used.' Then we started using voice output systems. He didn't want that either. But pretty soon his dad's like, 'Yeah, we'll take it. It's working.' But it took a few years."

Finally, Monica expressed the relationship between buy-in and parent and caregiver education:

"…I think that we have to help guide the parents in realizing the importance of the strategies that we use. It's a process and it's proven. You kind of have to guide them in their learning so that they buy into it because if the parents don't buy into it. It's going to be a longer road."

Training. Each participant shared their personal stories. Kate shared a personal story about using low-tech AAC to facilitate improved communication:

"…Working with the parents or the caregivers to come up with the best time to use the device or switch or pictures. Sometimes I say, 'Just place these pictures on the fridge and see, if they go to the fridge, grab the milk, and have them bring it to you."

Sally expressed potential misconceptions she has encountered while working as an SLP. She elaborated on the importance of caregiver training, education, and communication to eliminate confusion:

"… I think sometimes people might have the view that or the misconception that if you have a dynamic device it's going to be this immediate proficiency at being able to communicate using the iPad. It takes a lot of learning and modeling, and you're not going to set an iPad down in front of a student and expect them to master it right away. I think sometimes there is that misconception of, well, this is just going to be an immediate thing. Yeah, I think with that I mean, it's just a matter of informing, educating, and modeling to the caregiver. Again, I think that it comes down to communication on our part with the family and showing them those baby steps of we are not here yet but look what they can do over here."

Louise described her method of "Setting the Table" when parents or caregivers might refuse professional guidance:

"… I call, it 'Setting the Table.' You throw an idea out there, and say, 'I've been thinking about that. I went to this training this one time…' and you just throw the idea out there. The next time, you come back, and you try and make the parents feel like it's their idea. So, you set it up then you let them think about it for a little while. Maybe you model it a little bit when you're playing with the child or doing something. And then you bring it up again… So just bringing it up slowly for those parents that are really interested and modeling it. Afterward asking, 'Well, how did you think that went?' or 'What went well with that?' 'He didn't get so frustrated, why do you think that was?' They kind of get in on their own because then it's their idea and I didn't sell it to them. They feel sure of themselves. We tend to have to breadcrumb and say, 'This is the way we want to go.'"

Monica also weighed in on this topic:

"…I don't think a lot of parents would follow through if they had to be certified. I think that you'd have your choice like that family that you have where the dad just picked it up and took off with it… Ideally, that would be great if you could have some parents trained and then they could have a support group for families."

Family Initiative. Three of the four participants in the research study found initiative from family members and surrounding staff beneficial in the progression of the child's skills and abilities. Kate provided a personal story in relation to a paraprofessional she interacted with in the preschool setting. She expressed the paraprofessional acted as a caregiver in the preschool setting and found this statement to be relatable:

"…One year, I had a very good paraprofessional who just took over and started adding and taking out things that needed to be in and didn't need to be in, and that student progressed quickly."

Sally provided a detailed personal story where a child's father incorporated his training and education in AAC intervention during a drive to school with his child:

> *"… And I think it was last year at some point, dad had said on there when he would drive this kiddo to school. He (child) wanted to be a little backseat driver, and so they programmed his device so he could talk through the actions. I can't remember what they all said, but it was along the lines of, 'Turn right', 'Turn left', 'Oh, that's a bumpy ride!' And he just thought it was hilarious. I thought that was super creative. Yeah, you're busy and you have to get the kids to school, but while you're driving, look at him communicating and interacting with you."*

Monica discussed the progression of family initiative throughout the years as she has seen a significant increase in the current population of caregivers:

> *"…It seems like in the past parents never wanted to program devices. And I feel like a lot of parents are doing their own programming now."*

Consistency. Two of the four participants provided reasoning toward the significance of parent and caregiver involvement. Kate expressed her personal experience with consistent staff, which lead to further progression of the child's abilities:

> *"…(With) My homebound one, I have seen really good success because of their consistent staff. If there's no consistent staff, then we don't get good outcomes or progress of the student. The same thing with when we use AAC devices in the preschool classroom or the Head Start classroom. If you can get a teacher that's not scared to use it or even a paraprofessional that isn't scared to change things and add things, so the device is ready to use with any activity, I've seen very great follow through."*

She further explained consistency with family members and professionals is crucial

toward the successful implementation of AAC across multiple environments:

> *"…Consistency is the biggest predictor of success. If I am working with medical staff that work with the students and they're consistent, I've seen great success. If I have parents or other caregivers foster home, if they've got a routine down and they follow their routines pretty close, I've seen great success there too. I think with keeping things simple, I've also seen great success."*

Sally shared personal experiences regarding consistency with using motivating low-tech AAC to facilitate improvement across a child's communication environments:

> *"…Just using low-tech printed picture communication or sentence strips because a snack is a motivating thing at school. We do it every day when everybody's at the table, so it's a good communication opportunity."*

In conclusion, the data from category two, as stated by the participants, strongly support the importance of training as a component of the successful implementation of AAC in the preschool setting.

Theme Three: Successful implementation of AAC in the preschool setting is dependent on the environment, motivation, and skill set of the child.

Category Three: Children

The third category that emerged from the research study was, *Children.* Specific codes that emerged from the data included: *Decrease in Behaviors, Motivation, Routines, Environment, and Capabilities/Skills.*

***Decrease in Behaviors*.** Kate and Louise shared their experiences in providing a method of communication for the child, which ultimately resulted in a decrease in observed behaviors. Kate summarized her personal experiences with a decrease in behaviors with the following

statement:

> *"… The best thing is how they can see the tantrums and the screaming decrease because the child has a way to communicate. Instead of screaming and crying, they're going to the fridge and grabbing a picture of the milk or hitting a switch to turn on a fan as they are hot. Things like that. The practical use of what is being targeted."*

In Louise's response, she elaborated on the incorporation of buy-in to facilitate an observed decrease in the child's behaviors:

> *"…Once they're successful, the first time when little Johnny points to and gets what he wants and the kid's happy, not crying, parents are like, 'Oh, you know, that worked.' And then it becomes a little easier."*

Motivation. All participants agreed a child will communicate more frequently when they are motivated by an external factor. Two of the four participants provided examples of personal experiences related to motivating factors. Sally stated motivation stems from what the child wishes to communicate about:

> *"…Maybe not so much the environment but finding what they want to communicate about. Because if they don't want to communicate about it, then they're not going to at that age."*

Louise noted the involvement of siblings can motivate the child to carry out the use of the targeted AAC system:

> *"…Sometimes it's more motivating for the older sibling to carry it out for that child because they want to be the big sister, big brother. So, if we show them, 'Oh, here, which one do you want?' You can then point to what you want that motivates the younger sibling."*

Additionally, Louise addressed types of AAC that have been motivating for children in her previous experiences:

"…I make a lot of pictures of snacks… or their favorite toys or their cup their sippy cup or whatever, and those are probably the biggest ones (motivators)."

Routines. All participants agreed parents and caregivers are most likely to positively respond and use AAC when AAC is incorporated into daily routines. Kate addressed the demands of parents and caregivers, however, with the integration of AAC into daily routines, it increases opportunities for buy-in and success:

> *"…By the time, they get home from work they have to get food on the table, get them dressed, and then off to bed they go. I always try to give them one thing… they can say goodnight to their siblings or say a prayer at the table before dinner or saying the prayer before they go to bed. It's just one thing, have them say goodnight to their family members, and if we can do one thing, that's a big, big plus."*

Sally expressed the benefits parents and caregivers will receive with the integration of AAC intervention services into functional routines of the child:

> *"…People are busy, and if it's not something that they can kind of work into their routine or they see it's something separate or view it as a daunting task where they're like, 'Ok, we have to sit down and do this thing and it's going to take forever.'"*

Louise revealed mealtime or snack time has been an impactful, motivating routine for the majority of children she has provided services to:

> *"…Well, at home, I usually try to introduce something. I tell parents to pick a time of day and usually nine times out of 10, it starts with a mealtime or snack time…Revealing a specific routine of the day and starting with having the child making a choice or pointing*

to all done at home, during mealtime, or the other option is at daycare."

Lastly, Monica explained parents and caregivers are more likely to buy-in to AAC intervention services if they are incorporated into functional settings:

"…That's a tough one… I feel like when we were doing home visits and we made it more routine-based so that they built it into their routine, it wasn't necessarily an extra thing to have to do. I think it would be more successful."

Environment. The current research study was completed during the COVID-19 pandemic. One of the participants described the benefits and disadvantages of completing speech therapy services in the comfort of the child's home. Sally addressed the benefits of manipulating the home environment during the COVID-19 pandemic:

"… In March of 2021, everything was shut down. I felt that the families who had access to their own laptops or phones could connect with us. I felt like some of our kids actually made more progress because so many parents were home with their kids, and they were learning. They were learning through our examples, through our coaching, and through virtual visits that I really, truly felt made a huge difference. But then when parents started going back to work and life started becoming 'normal', again, I felt like, it was harder to get that connection with families again."

She also addressed the negative aspects of the home environment:

"Well, sometimes I think a lot of times, at home, the environment is just so different- Their kiddo might have a way of telling them what they want and whether that's going to get the object leading their parents to the thing by pointing, or whatever it might be, where at school, maybe they're doing those things and weren't able to expand on that communication. But at home, it's working for them. I think sometimes parents don't

always see a need to do something different, I guess because it's working."

Further, Sally explained the benefits of seeking motivating environments to develop increased communication of the child:

"I think any environment that the student cares about and is motivated by. I don't care what it is. We could do literally anything. And if they want to communicate about it, amazing, and we'll make it work."

Finally, Monica expanded upon the success she has witnessed with her clients in the preschool setting and how family member involvement can affect the carryover across environments:

"…I feel like the preschool setting has been the most successful for us and it depends on the family and the abilities of the child for how much they use it at home."

Capabilities/ Skills. Two of the four participants described the skills and abilities of individuals using AAC and how that can change across the lifespan as they grow more independent in their use across environments. Kate considered the child's cognitive and motor abilities to be more relevant toward the level of involvement of the individual using AAC:

"… I won't say necessarily age, I would say more of the cognitive and motor abilities. It all depends on what type of communication you're getting from the students, whether it's a blink or a facial expression or to state that they're understanding… It's picking up on the child's cue, their body movements, facial expressions, so they're able to tell or specify what they need or want through the different means of switches."

Sally expressed the need for parent and caregiver involvement may wean as the individual grows older and more comfortable in the navigation of their device:

"…I think, there's probably going to be older students, people who might need more

involvement, but then there's definitely going to be others who may become more independent with their devices, technology, or whatever it is that they're using. I think there are definitely individuals, who down the road, are able to program their devices or have a lot more input and say toward what kind of device they have and what goes on it. I think in those situations, the family and caregiver involvement might wean off a little bit. I think they would still be involved in being a communication partner because they'd be knowledgeable in that area and not everybody on a communication partner side understands those interactions all the time."

As is illustrated by the data reported above, the participants in this study discussed the vital nature of the environment and the motivation and skill set of the child.

Theme Four: Successful implementation of AAC in the preschool setting is dependent on the type of AAC, virtual programming, and barriers of available resources.

Category Four: Available Resources

The fourth category that emerged from the data included, *Available Resources.* Specific codes that emerged from the data included: *Low-tech, Mid-tech, High-tech, Telepractice, Videos, and Barriers.*

***Low-Tech*.** Three of the four participants explained their personal experiences in using low-tech AAC in their practices. Kate explained her previous experiences with the adaptation of books to increase the individual's participation and involvement in the classroom:

"Adapting books, so the kids can participate with any book. So, when the teacher's reading a book upfront, the student has a book in front of them and they can use the book to turn pages or state, 'Turn please' and then tell the teacher to turn pages."

Louise expressed the benefit of incorporating sign language into a child's daily routine to facilitate improved communication strategies across environments:

> *"A lot of the little ones I see don't need AAC, but we always try and implement some sort of sign whether it's so they can get their basic needs. In the transition between things and a lot of times the parents will go, 'Well, we tried using some sign, and then he started talking.'"*

Lastly, Monica described the importance of beginning with low-tech AAC prior to using high-tech AAC:

> *"Well, I would say that in the preschool setting, we typically get picture symbols started with the nonverbal children, and then build our way up to more high-tech assistive technology approaches."*

Mid-Tech. Three of the four participants shared their experience with mid-tech AAC. Kate shared her personal encounters with mid-tech AAC across functional environments and involving clients during mealtime:

> *"…We've done the Go TALK and the board with the 6 to 8 placement. I've done a lot with the switches, with a board to hook up blenders, so then they (AAC user) can help with meals. So that's been a very positive way that they can help with meal prep. If they want to make even their siblings a malt, they can run their blender from their switch."*

Similarly, Sally noted she has used mid-tech AAC in addition to high-tech AAC depending on the client:

> *"…I also have students who are exploring a lot of different switches. And then some that are using iPads or, you know, some sort of dynamic display device. Yeah, so there's definitely all of it."*

Louise shared the powerful impact of providing an individual with mid-tech AAC in the form of a switch:

"Give them a voice. Maybe it's something so he can push the switch and he'll say something and then he can imitate it."

Monica further dove into the numerous types of mid-tech AAC she has used across her 27 years of experience as an SLP:

"…We have some GoTalks- The one we have goes up to 20. We have some Cheap talks that are four buttons and eight buttons. We have a lot of step-by-steps, Big Macs, and little macs- those single switch items."

High-Tech. Participants shared their experiences in using different devices, programs, and applications across their settings. Kate expressed the flexibility in AAC she has used and seen amongst her clients:

"…Just using pictures. I've used very low tech with older kids, but I've used a lot of higher-tech with younger kids. Because even with my preschoolers, I had one that figured out Proloquo2Go and could get through different layers on a board. He was in preschool. Then, I've stuck with an older kid doing two picture choices."

Sally shared a personal story with a client using a Wego device. She explained the benefit of parental involvement background in terms of programming a high-tech AAC device:

"…The one with the Wego and the blue case… His family's amazing and they obviously have maybe some backgrounds that other families don't necessarily have as far as programming goes."

Monica explained a personal story regarding a client whose parents were able to independently program his device following initial speech therapy sessions. He was able to use

the device across functional settings:

"…By the time he left us, we had him started on an iPad and using it. His parents were using it and programming things to go back and forth to school, so he could share information from home in school."

Further, she addressed the application, "Proloquo2Go" that can be used on a high-tech AAC device such as an iPad:

"Usually, we take parent input for what kind of vocab they want at home. With Proloquo2Go, a lot of parents were learning how to do it themselves by programming their own pages.

Telepractice. Kate addressed the negative components she experienced while using telepractice during distance learning:

"…It's hard because you're sitting on one side of the screen, during our video sessions with our kids and parents. You try to facilitate something that's interactive. It's very difficult. So, I think the progress has slowed down in some instances although we did have one parent… She had a lot of things going on in her life, but she had to interact more with the son while we were in session because I couldn't be right there to grab or touch."

Kate further discussed obstacles she had to overcome. However, she highlighted the collaborative effort from parents and professionals to make telepractice a successful experience:

"…It was tricky, and then you didn't get to see them as many times as you normally would in a school week…Parents being able to get on- Did they have what they needed? Not all preschoolers had devices when we first started. The parents were getting on with their phones, so it just made for a lot of obstacles to get around. Everybody was trying

and so that was the nice thing- Everybody was trying to make it be successful."

Sally provided insight into the use of video calls during the COVID-19 pandemic. She explained there was an increase in parent involvement:

"…Parents would join the call, which was actually really awesome sometimes to be able to have it feel like we had a lot more of family involvement, not only for AAC, but anything that we were working on because parents, if they were able to, were right there during the session. With preschool, that was a little bit unique, because we had more flexibility to teach, interact, and check-in with the parents and maybe less of those synchronous services with the student. We would do this if we could, and we definitely tried to, but we also just did a lot of talking to parents and problem solving with parents."

Videos. Sally and Monica described videos as being beneficial to increasing parent involvement and demonstrating the child's success outside of the home setting. Sally found it helpful to use videos to educate and inform parents and caregivers of their child's success in speech therapy:

"…Keeping parents and caregivers in the loop of what you're doing and even sending a quick little video of a small success with something that you're trying; I think can really help. Just let parents see the progress during an unknown realm of times."

Monica addressed the benefit of videos during the COVID-19 pandemic as she was unable to complete home visits:

"…For the caregivers and family members, we begin with pictures and typically share what we've been doing with videos lately because of COVID. In the past, we did more visits, to daycare or at home, to demonstrate how we use the picture symbols with the

kids at school" … "In the school setting, I think that parent involvement is more consultative maybe because you're talking to the parents or emailing the parents and are sharing videos of things they've done at school for comparison."

Barriers. All participants of the current research study agreed there were numerous barriers they have had to overcome in their experiences when providing services. Kate described personal stories addressing lack of carry-over across numerous settings:

"…Well, I think one of the pieces is when they're not using it or they're not using it across environments, that makes it difficult. Some of my students have been very successful at home and then it doesn't come out of their backpack or very successful at school, but then the device doesn't come out of their backpack when they get home. So that is a very difficult thing just because it's hard when people have so many things going on in their lives... And I think working with the three-year-old and four-year-old's, we hope that as they get older, they'll become more of the independent person using it and advocating for themselves doing it automatically."

Further, Kate addressed an additional barrier potentially related to the lack of parent or caregiver involvement in the home setting:

"I think it's because it's another thing added to their plate. I don't always necessarily think that it's something they don't think is important. I do think that families feel that is important, but if that routine in the home, it just doesn't always follow through. And it's just hard."

Sally explained the lack of technology, time to complete training, resources, and understanding have been proven to be barriers. She further explained barriers in carryover during distance learning:

"…We only had contact with mom on the phone, so trying to get updates and figure out and problem solve some communication strategies for home is tricky. But we landed on sending home picture choices for preferred foods. At that time, I think we had gone over and tried to explain how to use them. But again, it's hard because the student wasn't with us, we couldn't send a video of her using them with us at school because we were in distance learning. Obviously, that's just an added barrier."

An additional barrier Sally addressed included:

"… But then during that time of distance learning. Parents chose to just only have email check-ins, and we really had a hard time even just connecting with them at all."

Louise addressed barriers related to the parent or caregiver, which could ultimately impact the language development of the child:

"I hear a lot of, 'Well, their dad didn't talk until he was five', 'They'll just grow out of it, he's just a boy and slow to develop', or 'Boys, learn to talk later.' There are some misconceptions about what typical language development is. They (Parents) just think that it'll come eventually, or they want somebody else to fix it."

Louise explained how a lack of interactions with other children or individuals across numerous environments can lead to delays in language development:

"… We saw somebody not too long ago that doesn't go anywhere, the child that is. Mom doesn't take him to the grocery store, he doesn't go to the mall, maybe to the park this summer, but you're not really interacting with anyone, and he doesn't go to daycare. The only kiddos he sees are his cousins that are a few years older than him. He has some words, but they're not functional and they're inconsistent. He is definitely displaying characteristics of being on the spectrum (ASD), but then we ask, 'Was that because he

hasn't been around other kids or seen other people, or is he truly on the spectrum?'

Monica reflected upon her personal experiences as a parent and addressed multiple factors that could potentially lead to a lack of carryover provided by the caregiver or family member. She came up with the statement:

"So, I feel like sometimes it's just enough for parents to get through the evening."

Lastly, Monica discussed one final misconception parents and caregivers have had toward AAC:

"I've had a lot of parents in the past that feel like using communication boards or devices will cause their child to not speak at all. And I feel like maybe that attitude has been detrimental for some students. Obviously, research shows that it helps improve their overall language, and kids have become more verbal obviously using the systems. A lot of times it just takes time."

In sum, data from all the codes in this category discuss the role that the type of AAC plays in the successful implementation of AAC. The participants also stressed the role that issues related to virtual programming, and barriers to available resources play when introducing AAC.

The final step in the analysis of the data was to combine the themes from the four categories to develop a final assertion statement that provides an answer to the research question. The final assertion that emerged following data analysis was: *Successful implementation of AAC is influenced by four factors that are related to SLPs and other professionals, parents and/or caregivers, children, and available resources.* The next chapter will introduce a discussion of the findings of the current research study with the available literature.

Chapter V

Discussion

The purpose of this chapter is to compare the findings from the current research study to the available research that addresses the question, *What are the factors related to the successful implementation of AAC with preschool children?* The first section presents a comparison of the findings from the research study to the current literature. The next section discusses the delimitations and implications of the study, recommendations for future research, and provides an overall summary of the research study.

Summary of Findings in Relation to Current Literature

Theme One: Successful implementation of AAC in the preschool setting is dependent on the attitude, perspective, and relationships of the SLP and their ability to work with other team members. This theme was developed from Category One, SLP/Other Professionals. Each of the codes in this category will be related to the current literature in the following sections.

SLP Perspective on Parent/Caregiver Involvement. The study conducted by Johnson et al. in 2006 highlighted the significance of parent and family perspectives and involvement toward AAC intervention. Overall, the study revealed that successful use of AAC by the individual using AAC is dependent on family involvement and that involvement from caregivers and incorporation of their perceptions can lead to AAC success or abandonment across long-term use. Johnson et al. (2006) illustrated this point when they said, "It also is imperative to consider family perspectives in AAC implementation because family members can positively or negatively influence the course of AAC use over time" (p. 87). All participants in the current research study agreed parent and family involvement is crucial toward a loved one's success in AAC use. As revealed in chapter four, Louise confirmed the significance of parent involvement

with the following quote: *"You have to have parents involved. It's just the parent coaching model that is built-in. The littles I work with would not be able to do any of it on their own. The more involved, the more interests, the more participation you can get from the parent, the better."*

SLP Perspective on Family/Caregiver Training. Johnson et al. (2006) further disclosed that, in addition to involvement, caregiver and family training is essential for the child's success. The research supported the idea that parent and caregiver training has been necessary toward the long-term use of AAC. Likewise, the research suggested lack of parent and caregiver training was linked to abandonment (Johnson et al., 2006). All participants in the current research study agreed family and/or caregiver training must happen to facilitate improved communication across communication environments. In chapter four, Kate described parent involvement as "hands-on". *"… Parents are engaged when I am there working with the student so they can see how I'm doing it and that they can mimic what I'm doing during the day when I'm not there."*

Building Relationships. Thistle and McNaughton conducted a study in 2015 to examine the effects of teaching active listening skills in establishing relationships with pre-service SLPs and parents of children using AAC. Results revealed collaborative relationships with family members and caregivers were essential in creating positive outcomes with AAC use. Furthermore, there is limited research on understanding the best instructional approach to teaching effective and efficient professional skills (Thistle & McNaughton, 2015). Two participants in the current research study provided strong reasoning toward the significance in building relationships. For example, Kate expressed her opinion with the following statement,

> *"…Building rapport with your parents and building that relationship to facilitate that engagement. And start simple. You don't have to have the high-tech stuff to be to get the*

most communication you can. Sometimes the lowest-tech stuff is the best."

Functional Collaboration. Bailey et al. (2006) investigated family members and their perceptions of AAC device usage. Results indicated that families were able to recognize the necessity of investing time and identifying it as a valuable component in the development of a collaborative relationship with professionals supporting their child. If such is the case, the research stated that collaboration with families and professionals should be supported in the school setting. In the current research study, Sally provided the researcher with a personal story relating to collaboration with nursing and family members to increase the successful use of AAC across environments.

"…He was impressing us every day. He had a nurse who would come to school with him. He would only come once we were back in person to limit exposure. We really didn't get to see him, but I feel like we still made so much progress because his nurse is amazing. She was with him the whole time, and she was very involved in the sessions. Then, she would bring things home and share that with his family and his parents. He has an older sister who loves helping out, too."

An additional quote provided by Sally provided insight toward collaboration with caregivers and the SLP across environments.

"(With) parents and caregivers is getting that involvement and collaborating- Not just me telling them but getting other people's input because I'm not in the classroom the whole time that I'm at school. I'm hopping around to different classrooms, so I don't always see all of the playtime, snack time, or whatever it may be."

Communication. The research study conducted by Thistle and McNaughton (2015) provided additional information on the importance of communication from the initial evaluation

throughout intervention was key to successful outcome measurements. Parents reported their perspectives did not feel valued, appreciated, supported, or even acknowledged in the decision-making process toward the development of an AAC system for their child. In the current research study, Sally emphasized the impact of communicating expectations of AAC with parents, which can ultimately lead to successful results.

> *"… Then it's a conversation of maybe that's what works for you. 'Do you want to try and structure that differently?' Encouraging her (child) to have to ask for those things, or maybe not. Maybe that's just not something that they're wanting to do… It seemed like she had the impression that her daughter would take these pictures, seek her out somewhere else in the house and then say, 'You know, I want chips' or 'I want something to drink'. Whereas she's maybe not quite at that point yet. You (parent) might have to initiate that when you see that she's acting like she's hungry. Then maybe she could tell you what she wants. I think it was just a good reminder of having to take baby steps in communicating expectations of what parents are expecting and thinking is going to come out of this AAC."*

Theme Two: Successful implementation of AAC in the preschool setting is dependent on the facilitation of training, education, and interactions of the parents and/or caregivers. This theme was developed from Category Two, Parents and/or Caregivers. Category two will be compared to current literature according to each related code.

Education. Biggs et al. (2019) conducted a study of the literature regarding the AAC user's communication partner and their role in modeling AAC interventions. Results revealed natural communication partners and their participation in education and training of intervention techniques can significantly influence a child's success when using or implementing aided AAC

across settings. All participants in the current research study viewed parent and caregiver education as beneficial in their child's success with AAC. As revealed in chapter four, Kate said,

> *"…Educating the parents on development is another big thing in letting them know where their child should be- This is what they're saying. This is what we should do when they respond this way. We've studied the development. They haven't studied the development. Giving them that education and understanding of where their child should be. Asking, 'Where are they at now?' and 'What kind of things can we do to get them to the next level to close that gap?'"*

Buy-In. DeCarlo et al. (2019) investigated the relationship between the operational competency of the caregiver and AAC system buy-in. The study reviewed previous research in addition to establishing new content and the findings of the study revealed family members or caregivers who promote positive attitudes toward the implementation of AAC often see development in the AAC user's independent use of the communication device across modalities. All participants of the current research study explained how parent and caregiver buy-in is essential toward a loved one's success in AAC. First, Sally confirmed the significance with the following statement,

> *"…Getting parents in on it from the beginning. Saying, 'Oh, we're trying this in therapy' or asking them, 'What are some things at home that you're seeing your kiddo is trying to communicate about, but they don't have all the tools?' They're (child) getting frustrated in this situation. 'What do you want out of this' is, kind of a big thing."*

Second, Monica expressed parent buy-in will lead to buy-in from the child.

> *"…Because I feel like if the family buys into it, the children will pick up on that positive attitude, buy into it, and see the function of communication through the device."*

Training. McNaughton et al. (2008) collected parent input toward the benefits and challenges their child has faced when using AAC to communicate. The results revealed parent and caregiver frustration toward the AAC intervention services as they felt professionals were not properly trained in AAC intervention strategies. The parents in the focus group acknowledged the significance of caregiver training and future improvements. In addition, McNaughton et al. (2008) revealed communication partners of the AAC user must contribute to the intervention plan. All four of the participants in the current research study provided stories of how they have trained family members outside of speech therapy. Kate described her personal experience with facilitation in the training of AAC and said,

> *"…I think, sometimes, if parents aren't seeing them (child) using it (AAC) successfully when they (parents) try to use it with them and aren't getting that reward and feedback from seeing their child using it, they're like, 'Well, this doesn't work.' So, we might send a video to demonstrate what we're trying to talk about. Some parents will do more of the modeling and understand that that's really important, but with some, that's not where they're at."*

Family Initiative. In their book, Beukelman and Light (2020) stated the facilitation of AAC must be provided by those who the AAC user relies on throughout daily activities (e.g., family members, friends, staff members, job coaches, etc.). Successful use of the AAC device is heavily reliant on the AAC user's communication partners, especially in beginning communicators. Communication partners must advocate for the AAC user's daily wants, needs, and desires to maximize outcomes and shape their communication skills across various environments. Three of the four participants in the current research study identified family initiative being a motivating factor in the implementation of AAC for both the child and adult

members.

> *"…We had one who ended up, over the course of a year, trialing different switches, mounts, and all kinds of AAC to come up with a whole communication system. He was a very complex kiddo, but it was really cool to go to his house and his mom was just amazing. She was very invested in all of it. We would leave the switches there, and it was cool to see what she would come up with to record on them. She would say different things to him or record different songs in their first language, which was Kurdish. That was just cool seeing that not just our ideas being told to them but giving them something they can use and then them coming up with ideas of how to use it."*

Consistency. McNaughton et al. (2008) collected parents' input regarding the benefits and challenges their child has faced when using AAC to communicate. Several participants in that study indicated consistent and constant access to their devices to develop the necessary skillset and competency to operate. Similarly, in the current study, two of the four participants stated they have seen successful implementation of AAC when staff and family members are consistent. As stated in chapter four, Kate said,

"…Consistency is the biggest predictor of success. If I am working with medical staff that work with the students and they're consistent, I've seen great success. If I have parents or other caregivers foster home, if they've got a routine down and they follow their routines pretty close, I've seen great success there too. I think with keeping things simple, I've also seen great success."

Theme Three: Successful implementation of AAC in the preschool setting is dependent on the environment, motivation, and skill set of the child. This theme was developed from Category Three, Children. Each of the codes in this category will be related to the current literature in the

following sections.

Decrease in Behaviors. Andzik et al. (2021) conducted a research study regarding the effectiveness of teacher-delivered behavior skills training on paraeducators' use of a communication intervention for a student with Autism who uses AAC. The AAC user had limited verbal output and utilized an iPad mini with TouchChat application to convey her intended messages. Results from the perspective of special educators included the AAC user was able to relay her wants, needs, and joys and appeared happier in addition to a decrease in observed challenging behaviors. In the current research study, three of the four participants have experienced a decrease in behaviors with individuals using AAC when their loved one is using AAC. One participant stated,

> *"…I think once they see how powerful that is for kids to have some sort of communication, when they first figure it out and they get what they want, the family is like, 'Wow.' For some families, it's seeing fewer tantrums and a change in behavior, which increases their use of it (AAC) and it's like, 'Oh, well, now that you can tell me what he wants, he doesn't get angry or he doesn't cry all the time or when I give him a choice, you know, he's much happier'"* (Louise).

Motivation. Light et al. (2019) discussed new and emerging AAC technologies that are developmentally appropriate for an individual's skill set as well as the ways young children learn language benefit from the use of meaningful and motivating activities throughout their everyday activities. In the current research study, Louise discussed the importance of finding motivating factors for young children and incorporating them into functional daily routines. Allowing children to be successful across environments such as providing choices or using sign language can be motivating for the child to use low-tech AAC to acquire a desired object.

"…We go into a lot of daycares and so same thing pick a time of day a setting to start with. A lot of times, it's mealtimes because kids seem to be more frustrated, more motivated, to get that food or that snack."

Routines. Douglas et al. (2021) conducted a national survey of SLPs utilizing telepractice during the COVID-19 pandemic to provide services toward aided AAC intervention. Research suggested parent training with AAC strategies would benefit from collaborative coaching models and family members identifying target routines in the home setting. Results revealed an increase in the target child's independent use of communication with their speech-generating device when incorporating family members into daily routines. In the current research study, Kate discussed the importance of establishing consistency across similar routines across the school and home settings. Ultimately, this can set the child up for success in their use of AAC to facilitate improved communication across functional environments.

"…They're (parents and caregivers) the ones that follow through with what we've been working on in school and then we try to get them set up to do it in their daily routines at home, so they view the AAC system from the routines in the classroom, and then we set up a situation for them to use that during their routines at home."

Environment. Biggs et al. (2019) discussed the completion of therapy in the home environment as opposed to a clinic or school setting. The article stated the home environment provided access to materials and daily routines pertaining to the child and their family members. SLPs provided insight into the negative factors of the structure in the home environment such as unpredictable noise levels, unavoidable distractions, and limited access to therapy materials. SLPs stated family members would provide materials from home, however, sometimes presented challenges rather than success. In the current research study, Sally elaborated on the various

environments a child may communicate in. Further, she addressed how that may affect the success or provide further detail toward structuring the environment differently for the child to be successful.

> *"…Families really want their kiddo to be able to do X, Y and Z. So, we try and figure out, 'Oh, this is something that we tried at school'. They've (child) been successful with it. But again, that's a different environment. As SLPs, we have the ability to structure it so differently across environments."*

Capabilities/Skills. Light et al. (2019) highlighted the skillset necessary to operate an AAC device at a young age by stating, "If diverse vocabulary representing a range of concepts is not added to AAC technologies as frequently as required, this lack of vocabulary will serve as an external constraint on the language learning and conceptual development of young children with complex communication needs. Vocabulary use at an early age is a strong predictor of the development of cognitive skills, literacy learning, and educational achievement" (Light et al., 2019, p. 28). Cognitive abilities are a similar factor that was addressed during the current research study. Kate and Sally both described the skill set of the children using AAC across functional environments in different manners. Kate relayed she believes it does not necessarily depend on an individual's age, but rather their cognitive and motor abilities. She provided the following statement:

> *"… I've used very low tech with older kids, but I've used a lot of higher-tech with younger kids. Because even with my preschoolers, I had one that figured out Proloquo2Go and could get through different layers on an AAC board. He was in preschool and then I stuck with an older kid just doing two picture choices. So, I don't think it depends on the age. I think it's more of the cognitive level and then their motor ability too."*

Theme Four: Successful implementation of AAC in the preschool setting is dependent on the type of AAC, virtual programming, and barriers to available resources. This theme was developed from Category Four, Available Resources. Each of the codes in this category will be related to the current literature in the following sections.

Low-Tech. Bailey et al. (2006) reported that the three participants in their study utilized low-tech AAC in the form of visual strategies such as a picture communication board or a schedule to aid in communication strategies. In the current research study, Louise discussed the significance of incorporating low-tech AAC to aid in regular communication strategies. As stated in chapter four, Louise said,

> *"…A lot of the little ones I see don't need AAC or but we always try and implement some sort of sign whether it's so they can get their basic needs. In the transition between things and a lot of times the parents will go, 'Well, we tried using some sign, and then he started talking.'"*

Mid-Tech. In the same study conducted by Bailey et al. (2006), the three participants in the study utilized mid-tech AAC in the form of single- or multiple- message switches with recorded voice output to convey their intended message across functional environments. Further, one of the parents of a participant elaborated on the functional use of AAC by stating, "I have an environmental control switch in the kitchen and so Paul helps me cook. So, he can run a mixer. So he hits… and if my family understands anything about the switches, it's about Paul's play. And everybody gets that the switch is hooked to a toy that Paul can play with. So that gives him something to do on his own" (Bailey et al., 2006, p. 55). The four participants in the current research study gave insight regarding the incorporation of mid-tech AAC across functional settings. For example, Kate described the incorporation of functional activities with mid-tech

devices during play-based activities*:*

> *"…I've worked a lot with the switches with fans, music, and toys, and having the kids interact with their siblings is very beneficial. For instance, the sibling would build something, and then it would be on the student with the AAC needs would have a car or some type of animal that would walk forward using the switch and then breaking down the tower and doing things like that."*

High-Tech. Light and McNaughton (2014) reviewed the definition of AAC and compared the current era of communication to 25 years ago to determine if previous research is still relevant. The research revealed the parent of an AAC user and his viewpoint on the positive effects of high-tech AAC meeting the complex communication needs of the individual: "… [the iPad] provides a rather elegant solution to the social integration problem. Kids with even the most advanced dedicated speech device are still carrying around something that tells the world 'I have a disability.' Kids using an iPad have a device that says, 'I'm cool.' And being cool, being like anyone else, means more to them than it does to any of us" (Light & McNaughton, 2014, pp. 19-20). Three of the four participants in the current research study discussed the usage of high-tech AAC devices amongst their clients. Participants discussed using technology such as iPads or devices and using applications such as Proloque2Go. As stated in chapter four, Kate provided insight toward high-tech AAC usage with one of her clients:

> *"…I've used a lot of higher-tech with younger kids. Because even with my preschoolers, I had one that figured out Proloquo2Go and could get through different layers on a board. He was in he was in preschool."*

Telepractice. Results from a 2021 study conducted by Douglas et al. revealed that parent training and coaching via tele-based services can be an effective method in training families and

caregivers in the proper use of aided language modeling across numerous environments. Further, the study highlighted the importance of supporting family members and their children in using everyday routines when using an AAC device. The current research study revealed the benefits and disadvantages in the use of telepractice services during the COVID-19 pandemic. However, as revealed in chapter four, Sally addressed one of many benefits of using telehealth services to facilitate improved parental involvement:

> *"…Parents would join the call, which was actually really awesome sometimes to be able to have it feel like we had a lot more of family involvement, not only for AAC, but anything that we were working on because parents, if they were able to, were right there during the session."*

Videos. Douglas et al. (2021) completed research during the COVID-19 pandemic and were limited to remote facilitation of "hands-on" training with parents and caregivers. The researchers discussed the use of providing video models demonstrating the accurate use of speech-generating devices (SGDs). Although the videos were a smaller section of the research study, they allowed training for family members in aided language modeling interventions, which ultimately resulted in increased high-fidelity models. In the current research study, Sally stated she has only received positive feedback when using videos to educate parents and family members about their child's success.

> *"…So, I think initially just taking the time upfront to get families involved and excited about AAC and I've said it a million times, but I think sending, especially again, in a school where you're not with the parent during the session, but sending those little videos home, I don't think I've ever gotten a bad response from that."*

Barriers. A study completed by Fäldt, Fabian, Thunberg, and Lucas in 2020 investigated

the parent perceptions of the ComAlong Toddler early intervention program. This qualitative study revealed that lack of involvement from the parents or family members can create a barrier to successful outcomes, future involvement, and decreased family cohesion. Likewise, parents suggested gathering outside group therapy sessions to improve group support, caregiver involvement, and peer learning for caregivers who have difficulty in attendance of sessions (Fäldt et al., 2020). All participants from the current study agreed there have been various barriers encountered while providing services. A few examples provided in the current research study included lack of carryover from parents or caregivers across settings, insufficient training, resources, or understanding of strategies, absence of communication with family and caregivers, and misconceptions about the language development of a child. Sally addressed an additional barrier such that being unable to properly access the technology required for speech therapy during the COVID-19 pandemic could impact parent and caregiver involvement:

> *"…Yeah, I guess it depends on access to technology and not just the device, technology, or switches. But right now, we're relying heavily on sending videos, emails, and video calls. Being able to access that, I think is important."*

The next section will address the delimitations and implications of the current research study, recommendations for future research, and provide a summary of the current research study.

Delimitations

This study included four participants from the upper Midwest who responded to interview questions that addressed the topic of SLP perspective of caregiver involvement in a loved one's usage of AAC. Data collection was completed during the COVID-19 pandemic via HIPAA-compliant Zoom platform. All of the participants in this research study are or have been

associated with the programs and services provided by Early Childhood Intervention, Early Childhood Special Education Services (ECSE), and Head Start. Additionally, the clients served by the participants of the research study fall within the age range of birth to five-years-old. The challenges to service delivery caused by the COVID-19 pandemic may have affected the professional perceptions of the study participants as well as their personal experiences.

Implications

While the results from this study cannot and should not be generalized, they do support the theory that SLPs strongly promote parent and caregiver involvement as it is essential for the successful implementation of AAC in a loved one's usage of AAC across the preschool setting. All participants in the study directly supported the need and benefit of parent and caregiver involvement. This involvement was supported by the data in the study because of the current training opportunities that had been accessible to them. However, it is important to note that parents and caregivers are unable to ask for something they do not know about. The findings from this study suggest that improvements are needed in both the opportunities and resources available for parents and caregivers in the area of training and education in AAC use. This need for formal parent and caregiver training extends across populations. One final implication of this study is that additional investigation is essential to determine the most useful delivery methods in training caregivers.

Recommendations for Future Research

Future research studies related to this study should expand to explore the perspectives of other professionals who work with this population related to the perspectives of parent involvement in AAC or topics such as IEP meetings, early intervention, etc. Additional research is also needed that explored the role of parent or caregiver involvement with students beyond the

preschool level (e.g., middle school or high school, adults, etc.). The findings of the study could also be strengthened by replicating it with a larger sample size. This would ultimately increase the validity of the data and increase the generalizability of the results. Finally, it must be noted that the participants who were included in the current research study were four white females. Considerations toward cultural and ethnic backgrounds could be expanded upon with increased diversity in participants by exploring a wider region not limited to the upper Midwest.

Summary

The current qualitative research study consisted of four semi-structured interviews with four speech-language pathologists across two cities in the upper Midwest. The research question addressed during the study was, *What are the factors related to the successful implementation of AAC with preschool children?* Analysis of the results revealed the successful implementation of AAC is influenced by four factors that are related to SLPs and other professionals, parents and/or caregivers, children, and available resources. The results from the current study support the theory that SLPs strongly promote parent and caregiver involvement as it is essential for the successful implementation of AAC in a loved one's usage of AAC across the preschool setting. However, there is a need for additional formal parent and caregiver training across populations to unravel how to best deliver training with caregivers and educate SLPs. Future research should include a larger number of participants across various regions, be completed once the COVID-19 pandemic is completed, and study various populations to accurately depict speech-language pathologists' perceptions more accurately regarding parent and caregiver involvement in a loved one's usage of AAC.

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Institutional Review Board

MINNESOTA STATE UNIVERSITY MOORHEAD

DATE:	September 1, 2021
TO:	Kris Vossler, PhD Megan Hintz
FROM:	Lisa Karch, Chair Minnesota State University Moorhead IRB
ACTION:	**APPROVED**
PROJECT TITLE:	[1790959-1] The Role of Family Members or Caregivers and Their Involvement in a Loved One's Usage of Augmentative and Alternative Communication in the Preschool Setting from the Perspective of a SLP
SUBMISSION TYPE:	New Project
APPROVAL DATE:	September 1, 2021
EXPIRATION DATE:	
REVIEW TYPE:	Exempt Review

Thank you for your submission of New Project materials for this project. The Minnesota State University Moorhead IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to the Minnesota State University Moorhead IRB. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the Minnesota State University Moorhead IRB.

This project has been determined to be a project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your

documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of .

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the Minnesota State University Moorhead IRB. Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Minnesota State University Moorhead's records.

Appendix B

Participant	Setting/Experience
Participant 1: Kate	• 19 years of experience as SLP • Previous experience in skilled nursing facility (SNF) • Assisted with birth to three and recently moved to three-year-old to five-year-old population • Birth to three program has been completed across home and daycare settings, or early childhood family education classes • Three to five-year-olds are seen mostly throughout HeadStart (going to facilities) • Collaboration with physical therapy (PT), occupational therapy (OT), certified occupational therapy assistant (COTA), teachers, parents, special education teachers, nursing, behavioral professionals, and dieticians
Participant 2: Sally	• Six years of experience in the preschool setting • Previous experience in private practice • Currently works in the preschool setting (three-year-old to five-year-old) • Occasionally works with younger individuals (birth to three) if they plan to transition to a three-year-old classroom • Jump Start classroom (inclusive classroom with co-teaching model) • Collaboration with classroom teacher, Jump Start and ECSE teachers, paraprofessionals, OT, OTA, PT, and other SLPs
Participant 3: Louise	• 19 years of experience as SLP • Three years of experience in preschool setting • Previously worked in North Dakota (early intervention is private and not part of school setting) • Primarily works with birth to three, however, mostly completes home visits
Participant 4: Monica	• 27 years of experience as SLP (Six years in North Dakota, 21 years in Minnesota) • Works primarily with three- to five-year-olds, but works with two and a half to three-year-olds as needed • Program runs birth to age five • Majority of services are provided in Jump Start preschool classroom • 50% of individuals have an Individualized Education Program (IEP), 50% do not

	• Provides one-on-one services as needed

Interview Protocol

My name is Megan Hintz, and I am a second-year graduate student at Minnesota State University Moorhead. I will be facilitating our encounter today. This interview will be recorded via MP3. The goal of the research study is to gain an understanding of family or caregiver involvement of their loved one using an AAC device from the perspective of a SLP. We want to know what appears to be working versus what does not from your standpoint. Ultimately, this study will gain insight of the impact caregivers or family members have on their loved ones in the implementation of a device.

You have been selected to participate and reflect upon your professional experiences of the involvement of parents or caregivers and the impact on the individual utilizing the AAC device. Prior to this interview, you were sent a consent form to complete. Did you bring that with today or can you show it on your screen? The interview process should take approximately 40 minutes to gather adequate information and will follow a designed interview protocol. Thank you for being here today and we look forward to gathering information and listening to your insight.

Do you have any questions before we begin? If not, then we will begin with the first question.

Interview Questions

1. Briefly describe your background information as to your work setting, individuals you interact with on a regular basis, and other professionals you encounter.

   Probe: How long have you worked as a SLP in the school setting?
2. What role do caregivers or family members currently play in the implementation of AAC with individuals in the preschool setting?
3. What other members would play an influential role in the involvement of an AAC device (e.g., sibling, friends, teachers, etc.)?
4. What environments are most often utilized that result in successful implementation?
5. How would you describe the word, "involvement" in the means of the caregiver or family member role?
6. Does "involvement" vary with the age of the individual utilizing the AAC device?
7. What are other outside factors that would help increase successful implementation if parents are not significantly involved?
8. **Follow-up question:** Why do you think caregiver and/or family members are not involved? What do you think would increase their interactions with the individual using AAC?
9. Tell me about some of the caregiver or family member behaviors that have proven **effective** toward successful implementation. Why?
10. Tell me about some of the caregiver or family member behaviors that appear to be **detrimental** toward successful implementation. Why?
11. Tell me about some of the caregiver or family member behaviors that SLPs believe would **increase** the successful introduction of AAC. Why?

12. Do you believe parent and/or caregiver involvement is crucial for a loved one's success when using an augmentative and alternative communication device?
13. How has the COVID-19 pandemic impacted the involvement of caregivers or family members?
14. How do you think caregiver or family member involvement is in other areas of the state? The nation? The world?
15. Do you think there should be a level of certified training that is required for caregivers or family members to ensure they are following guidelines and measures? Why?
16. What are some measures you have taken to increase the level of involvement in situations where you notice parents or caregivers are refusing to listen to professional advice?
17. Do you have any advice for future SLPs who may encounter lack of caregiver or family member involvement?

Institutional Review Board

MINNESOTA STATE UNIVERSITY MOORHEAD

Consent Form

Please read this consent agreement carefully before agreeing to participate in this study.

Title of Study: The Role of Family Members or Caregivers and Their Involvement in a Loved One's Usage of Augmentative and Alternative Communication in the Preschool Setting from the Perspective of a SLP

Purpose of the study: The purpose of this research study is to explore the perceptions of SLPs concerning the involvement and/or role of caregivers or family members when their loved one is utilizing an AAC device for communication purposes. In addition, the study will gain insight from the perspective of the SLP regarding the expectations of family members or caregivers for successful implementation of the communication device.

What you will do in this study: You will determine your interview preference (i.e., face to face or online via HIPAA-compliant Zoom platform). You will be responsible to answer a series of questions presented by me concerning your personal experiences with caregiver involvement in a loved one's usage of AAC.

Time required: 30-45 minutes

Risks: You are at no more than minimal risk by participating in the study. The interview questions will be related to your professional opinions, experiences, and insights about parent and/or caregiver involvement in a loved one's usage of AAC in the preschool setting. The most risk you will experience with participation of this research study may be feelings of discomfort when reflecting upon personal experiences.

Benefits: You will be allowed to share personal experiences, expertise, and your wealth of knowledge regarding parent involvement with a loved one's usage of AAC during the interview while names remain anonymous.

Confidentiality: The interviews will be conducted using a HIPAA-compliant Zoom platform or face to face, at your discretion, to ensure confidential material is protected. All interviews conducted will be recorded and MP3 Recorder for interpretation of results later. The names of the participants will remain anonymous to ensure adequate confidentiality measures are met.

Participation and withdrawal: You may withdraw from the research study at any given time. If you wish to discontinue your participation, you must inform the research team immediately. A reason for withdrawal from the study can be provided. However, it is not required.

Contact:
Megan Hintz, phone: (507) 923-1397, email: megan.hintz@go.mnstate.edu or Dr. Kris Vossler, Associate Professor, phone: (218) 477-4200, email: kris.vossler@mnstate.edu.

Whom to contact about your rights in this experiment:
(Dr. Kris Vossler), email: kris.vossler@mnstate.edu, phone: (218) 477-4200, Associate Professor, or else you may contact Dr. Lisa I. Karch, Chair of MSUM Institutional Research Board, at irb@mnstate.edu, or 218-477-2699.

Agreement:
The purpose and nature of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time and my withdrawal will not affect any future relationship with Dr. Kris Vossler or Megan Hintz.

In signing this agreement, I also affirm that I am at least 18 years of age or older.

Signature: _____ Date: _____

Name (print): _____