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## AAC CAMP AS A PRE- AND POST- SERVICE TRAINING MODEL

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AAC CAMP AS A PRE- AND POST- SERVICE TRAINING MODEL

By

Joanne Kim

A Thesis Submitted

In Partial Fulfillment of the  
Requirements for the Degree of

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University of the Pacific  
Stockton, California

2022

AAC CAMP AS A PRE- AND POST- SERVICE TRAINING MODEL

By

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## AAC CAMP AS A PRE- AND POST- SERVICE TRAINING MODEL

## Abstract

By Joanne Kim

University of the Pacific  
2022

The purpose of this study was to determine the effectiveness of participation in an AAC-based day camp as a pre-service training opportunity for students of speech-language pathology and a post-training opportunity for practicing speech-language pathologists (SLPs). Following the conclusion for the most recent iteration of the AAC Academy hosted by the Diagnostic Center of Central California, students and SLPs who volunteered within the past ten years were recruited via email to participate in semi-structured interviews. Upon thematic analysis of the interview transcripts, the following themes were conceptualized: (1) Many volunteers had some interest, if not experience, with AAC prior to volunteering for the AAC camp; (2) Volunteers found that AAC camp facilitated a supportive and collaborative learning environment; (3) the AAC camp served as an opportunity for experiential learning, (4) Participation in the AAC camp resulted in greater confidence and/or interest in AAC intervention, (5) Intervention strategies learned while volunteering for the AAC camp. The responses from the study participants suggest that the AAC camp model is a viable pre- and post- service training model.

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## CHAPTER 1: INTRODUCTION

Augmentative and alternative communication (AAC) is defined as any modality of communication that either supplements and/or replaces natural speech (ASHA, n.d.). These modalities can be unaided methods that do not require an external tool (e.g., gestures, manual signs, etc.) or aided tools, which may be nonelectronic (e.g., communication boards/books, picture exchange) or electronic (e.g., speech-generating device) (ASHA, n.d.). For the purpose of this study, this paper will primarily focus on aided AAC methods such as speech-generating devices (SGDs). While many take the ability to speak for granted, there are individuals with complex communication needs (CCNs) for whom speech is not a reliable or functional way to communicate due to congenital (e.g., intellectual disability, autism, cerebral palsy) or acquired (e.g., traumatic brain injury, degenerative disease, stroke) conditions (Beukeulmen & Mirenda, 2013). Individuals with CCNs are present in all ages and cultural, linguistic, ethnic, and socioeconomic groups, making it difficult to precisely determine the prevalence of AAC users (ASHA, n.d., Beukeulmen & Mirenda, 2012). According to a national survey of special educators spanning the U.S., 18.2% of special education students were AAC users; specifically, 6.9% used gestures, 6.5% used picture-based systems, and 6.9% used an SGD (Andzik et al., 2018). In addition, Beukelman and Light (2020) have estimated that approximately 5 million Americans and 97 million individuals worldwide may benefit from a form of AAC. Speech-language pathologists (SLPs) play a prominent role in helping individuals with CCNs to acquire and learn to utilize AAC systems that are appropriate for them (ASHA, n.d.). However, many practicing SLPs, especially generalists for whom AAC users only make up a portion of their caseload, report that they are not well-equipped to serve individuals with CCNs (Marvin,



Montano, Fusco, & Gould, 2003). While most SLP students now take at least one graduate-level course in AAC, many still graduate with little to no clinical experience in AAC (Costigan & Light 2010; Johnson & Prebor, 2019). Many clinicians seek training opportunities post-graduation, which exist through a variety of formats, such as workshops and webinars. While these resources are useful, those who seek these resources would likely benefit more from a learning environment in which they could receive more feedback and hands-on support.

For over a decade, the Diagnostic Center of Central California has hosted weeklong summer day-camp immersive experiences for AAC users who primarily use speech generating devices (SGDs) as their communication method. In addition, the University of the Pacific's Department of Speech-Language Pathology partners with the Diagnostic Center of Central California every summer to host these camps at the RiteCare Childhood Language Center of Stockton. The participants are paired with volunteers (practicing SLPs, speech-language pathology students, and typically developing peers) to engage in various activities together, such as games, crafts, sports, etc. in order to facilitate a language-rich environment for the participants. Studies on the outcomes of AAC camps are quite sparse, and the few available studies primarily focus on the communicative abilities of the participating AAC users rather than the experiences of the volunteers who serve as facilitators (Bruno & Trembath, 2006; Dodd & Hagge, 2014). Studies that do examine the perspectives of the volunteers are centered on student volunteers rather than those who volunteer as practicing SLPs (Fainsinger, Jaeb, Mahé, Urish, and Pollock, 2018). This study seeks to determine the effectiveness of participation in an AAC-based day camp as a pre-service training opportunity for graduate students and a post-training training opportunity for practicing clinicians, as the model provides an opportunity to apply learned strategies in a real-life setting and gain feedback from clinicians with more AAC

experience. It seeks to do this by examining the perspectives of participating speech-language pathology students and practicing SLPs.

## CHAPTER 2: LITERATURE REVIEW

### **Role of the Speech-Language Pathologist in AAC Assessment and Intervention**

According to the American Speech-Language-Hearing Association (ASHA), speech-language pathologists (SLPs) are expected to screen, assess, and treat individuals with CCNs under their scope of practice (ASHA, n.d.). Throughout the assessment and intervention process, SLPs must collaborate with a variety of stakeholders. During the AAC assessment process, the following personnel are involved: the individual with CCNs, the AAC finder (the person who identifies those who may benefit from AAC), the generalist SLP, an SLP specializing in AAC, AAC facilitator/communication partner, and collaborating professional (Beukelmen & Mirenda, 2013; Binger, Ball, Dietz, Kent-Walsh, Lasker, Lund, McKelvey, & Quach, 2012). The roles of the professionals involved in the AAC assessment process are not always clearly defined. For instance, AAC finders may be the individual with CCNs, important family members, generalist SLPs, or medical and/or educational staff (who may also serve as a collaborating professional) (Binger et al., 2012).

A comprehensive AAC assessment is quite involved, as SLPs must make appropriate referrals, obtain a thorough case history, evaluate the potential AAC user's current communicative capabilities (e.g., expressive and receptive language, pragmatics, cognitive communication), and conduct a feature-matching assessment in order to determine which AAC systems to trial (ASHA, n.d.). Dietz, Quach, Lund, and McKelvey (2012) suggest that it is not uncommon for generalist SLPs to initiate the referral process, collect information on the individual's medical, educational, and social background, and assess the individual's linguistic capabilities while AAC specialists focus their case history on information specific to

AAC use (e.g., potential motor and visual limitations, cognitive-linguistic skills, etc.), evaluate the individual's functional communication skills, and take on the feature-matching process.

When conducting a feature-matching assessment, the SLP should consider the following: access methods (e.g., direct vs indirect selection), symbol type (e.g., objects, pictures, letters), field size (e.g., number of symbols), display organization and features, the range of communicative functions, physical positioning and seating, ease of use across different communicative environments and with a variety of communication partners, and most importantly the AAC user's needs and preferences (ASHA, n.d.; Beukelmen & Mirenda, 2013). Overall, the AAC assessment should ensure that individuals with CCNs are paired with a communication system that effectively meets their needs, as a mismatch between the system and the individual often results in device abandonment (Johnson, Inglebret, Jones, & Ray, 2006).

Once an AAC system has been selected, the SLP (along with collaborating professionals) is responsible for facilitating the AAC intervention process and in doing so, must strike a balance between meeting the individual's immediate communicative needs and planning for their needs and communicative skills to potentially change in the future (Beukelmen & Mirenda, 2013). The three main components of the intervention process are as follows: interventions to improve upon the individual's current capabilities (e.g., addressing speech sound production and AAC intervention simultaneously), environmental adaptations (i.e., adapting the AAC user's surroundings to be more conducive to their communication method), and the incorporation of AAC intervention strategies and techniques (Beukelmen & Mirenda, 2013). Ideally, the AAC user should have access to a variety of communication modalities that they can utilize depending on their needs across contexts (ASHA, n.d.). It is also preferable for the intervention to take place in the AAC user's natural environment (e.g., school, home, community) rather than in

isolated therapy rooms or similarly artificial settings; this way, the individual is more likely to generalize the use of the AAC system (ASHA, n.d.; Beukelmen & Mirenda, 2013; Calculator & Black, 2009). Moreover, the SLP working with the individual with CCNs must continuously involve and train the individual's communication partners, who may be related professionals, families, friends, and caregivers (ASHA, n.d.). Should the SLP not take communication partners into proper consideration, the individual with CCNs is not likely to continue using the AAC system (Angelo et al., 1995; H. P. Parette et al., 2000; P. Parette et al., 2000).

### **Pre-Service Education of SLPs in AAC**

It is important for individuals with CCNs to be equipped with the appropriate supports to learn to communicate in the most efficient and effective way possible. However, these individuals often face countless obstacles during this process. Some of these obstacles can be due to the individual's capabilities or the effectiveness of their current communication system (referred to as access barriers) while other obstacles are caused by issues with legislation, flaws with implementation practices, unfavorable attitudes, and/or inadequate knowledge and skills on the part of the professional working with the individual with CCN (referred to as opportunity barriers) (Beukeulmen & Mirenda, 2013). Both access and opportunity barriers may prevent individuals with CCNs from obtaining an effective AAC system; however, far fewer studies are dedicated to analyzing the effects of opportunity barriers than that of access barriers (Light & McNaughton, 2015). The opportunity barrier of professionals with inadequate knowledge and skills is concerning, given the increasing number of individuals who have CCNs.

Because SLPs play an important role in assessment and intervention for individuals with CCNs, it is crucial that they are well-trained in AAC before entering the field – if they do not possess the basic skills, their clients with CCNs will be recipients of poor services. For instance,

more students in public schools are considered to be candidates for AAC systems, and in turn, more public school SLPs are expected to directly serve their students with CCNs (rather than having these students exclusively served by specialists (Dodd, 2013)). Because more individuals with CCNs are expected to be served by SLPs who consider themselves to be generalists who address a wide variety of communication targets, rather than specialists who focus solely on AAC assessment and treatment, AAC is a topic that must be thoroughly covered in preservice training programs. The need for preservice training in AAC has not gone unrecognized by ASHA – in fact, the organization added “communication modalities” as one of the major content standards in 2005 and in 2014, changed “communication modalities” to “augmentative and alternative communication modalities” to explicitly state the need for clinicians to possess AAC knowledge (Council of Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language Hearing Association, 2013).

However, many SLPs report that they do not possess the knowledge and/or skills necessary to appropriately provide individuals with CCNs with assistive technology (AT) and AAC services. In a study by Marvin, Montano, Fusco, and Gould (2003), practicing SLPs were interviewed regarding their perspectives on their pre-service training and experience with AAC systems in their workplace. Even though more than half of the respondents made recommendations for AAC systems, the majority of them reported that they received very limited education and training in this area. Those who frequently work with individuals with CCNs on a regular basis reported that the majority of their AAC education came from on-the-job training (Marvin, Montano, Fusco, & Gould, 2003). This indicates that there is a wide gap between those who would benefit from AAC and those who are thoroughly trained to serve this population. A systematic review conducted by Costigan and Light (2010), in which they

analyzed the existing research on preservice training programs in AAC for SLPs and related professionals, found that while between 1998 and 2008, the number of programs providing at least one AAC course has increased by 11%, many programs do not require their students to take the course (instead, offering it as an elective). However, most recent findings state that number of graduate programs offering an AAC course has increased to 86% (Johnson & Prebor, 2019), which is a 13% increase from the past decade (Ratcliff et al, 2008). In addition, many graduate programs cover AAC across multiple courses, with some programs offering more than one dedicated AAC course and others incorporating AAC in other content courses (Johnson & Prebor, 2019).

Although there has been a significant increase in AAC course offerings at the graduate level, many programs reported that less than half of their students experience fieldwork opportunities in AAC (Costigan & Light, 2010; Johnson & Prebor, 2019), which is another concern because while coursework is essential, it should complement, not replace, hands-on experience. While comprehensive pre-service training in AAC is essential to addressing the potential knowledge barriers, it cannot by itself prevent the presence of skill barriers. To be specific, even if an SLP is well-educated about the types of AAC available and best practices for assessment and intervention, they might still struggle with actually implementing strategies in practice and staying up to date with technology advances in AAC (Beukelmen & Mirenda, 2013; Johnston, Blue, Gervarter, Ivy, & Stegenga, 2020).

### **Post-Professional Training of SLPs in AAC**

Although preservice training in AAC has improved markedly over the years, SLPs may find it necessary to seek post-professional training in AAC in order to effectively service their clients with CCNs. These trainings may include, but are not limited to workshops, conferences,

webinars, online communities, and websites (Johnston, Blue, Gervater, Ivy, & Stegenga, 2020). There are free resources available to clinicians and students through the Rehabilitation Engineering Research Center on AAC (RERC–AAC), such as online training modules with the opportunity to quiz oneself and webcasts with step-by-step instructions and video examples (Johnson & Prebor, 2019). In addition, the AAC Learning Center, provided through a joint effort by Pennsylvania State University and the RERC – AAC, is a free online resource that provides presentations by AAC users, content from AAC researchers, and links to additional information on AAC. Website based resources include the ASHA Practice Portal, which provides clinicians with curated and evidence-based content on the major clinical topics in the field, including AAC, and blogs dedicated to AAC (e.g., <https://praacticalaac.org/>).

While there is a lot of information available free of cost, the resources available do not often provide opportunities for practicing clinicians to receive feedback on their application of the strategies they learn (Johnston et al., 2020). This is important to note, as feedback is a critical if practicing clinicians are to actually retain the information and continue to use the strategies they learn from the training programs (Diamond & Powell, 2016; Johnston et al., 2020). Johnston et al. (2020) suggest that post-professional training may be more effective if they incorporate the educational coaching model. Within the educational coaching model, those with expertise observe and provide ongoing feedback to generalists to ensure that the generalists successfully adopt the best practices (Joyce & Showers, 1982; Sailors & Shanklin, 2010). A growing body of studies suggests that incorporating the coaching model increases the use of best practices for AAC intervention and are positively correlated with optimal outcomes for the individuals with CCN receiving AAC intervention (Binger, Walsh, Ewing, & Taylor, 2010; Hanline, Dennis, & Warren, 2018; Johnston et al, 2020; Kent-Walsh, Binger, & Hasham, 2010;



Kent-Walsh, Binger, & Malani, 2010; McMillan, 2008; Senner & Baud, 2017). Unfortunately, there are not enough AAC specialists in the field of communication disorders, and in turn, this type of training is inaccessible to many generalist SLPs (Johnston et al., 2020; Lund & Light, 2007).

### **Outcomes of AAC Camps**

AAC camps are a type of service delivery model in which AAC users engage in recreational activities like that of a traditional day camp with hopes of providing the participants with a short-term, language-rich experience in a highly-motivating, naturalistic environment. In the context of an AAC camp, this is accomplished by having camp counselors implement a variety of techniques to foster language stimulation such as modeling, self-talk, parallel talk, and language expansion while interacting with the campers (Dodd, 2013). These camps provide a particularly good opportunity for counselors to engage in aided language stimulation, a form of modeling in which the communication partner uses the AAC user's system to communicate to them (Ronski & Sevcik, 1988). Some may be doubtful regarding the amount of progress that can be made within a short-term program, but one must consider that AAC camps are quite intensive, especially when compared to pull-out services as typical in public schools (e.g., twice a week, 30-minute sessions), as the participants are engaging with their devices for at least a few hours on a daily basis for the duration of the program (Dodd, 2013).

Although AAC camps have been around for quite some time, there is a lack of research measuring the outcomes and benefits of these programs. Nevertheless, the existing studies, however sparse they may be, suggest that these programs are overall beneficial for AAC users. On their study on the outcomes of Chapman University's *All About Communication (AAC)* camp, Dodd and Hagge (2014) found that all the participants increased the quantity and variety

of symbols used, the average number of symbols used per message, and the types of communicative functions. This is significant given that 34% of the participants were not communicating with symbols at the start of the program, opting instead for unaided methods such as gestures and vocalizations to make their wants and needs known to others (Dodd & Hagge, 2014). Moreover, Bruno and Trembath (2006) found that for many participants of *Camp Chatterbox* (a weeklong AAC camp), there was both an increase in the number of grammatical morphemes within a message and overall syntactic complexity (although individual performances varied). In addition, Fainsinger, Jaeb, Mahé, Urish, and Pollock (2018) found that participating student clinicians of *AAC Camp Alberta* (an AAC camp for children who use speech-generating devices) increased their knowledge, skills, and confidence with AAC systems after receiving training on aided language stimulation and applying that knowledge through hands-on experience.

## CHAPTER 3: METHODS

Every summer, the Diagnostic Center of Central California hosts summer day camps for school-aged AAC users who are paired up with volunteers that includes practicing SLPs, SLP students, and typically developing peers. The volunteers serve as language facilitators for the AAC users as they participate in various activity stations (e.g., games, crafts, etc.). This study used qualitative research methods to determine the effectiveness of the AAC camp model as a pre- and post- service training program for SLP students and practicing SLPs. Following the conclusion of the most recent iteration of the AAC Academy in July 2022, those who volunteered for the camps within the past ten years were recruited to participate in the study. The participants were recruited via email with a brief message about the study and a copy of the informed consent form. Because the participants were being recruited internally, the primary investigator did not use any additional recruitment material (e.g. flyers, posters, etc.).

### **Participants**

As mentioned above, the participants of this study were those who volunteered for at least one of the AAC Academies within the past ten years. To participate in the study, it was required that the individual had volunteered for the AAC Academy as a student in speech-language pathology and/or a practicing SLP. Six of the study participants volunteered as practicing SLPs and eight volunteered when they were students. Among the student volunteers, half are now practicing SLPs and half are still students. In addition, the primary investigator and faculty advisor, who volunteered for the most recent iteration of the camp in July 2022, were excluded from the study.

## **Interviews**

The interviews were semi-structured, so while each interview followed the same general outline and involved a prepared list of questions, the primary investigator also asked follow-up questions and/or probing questions to elicit more information about the participants' perspectives. The primary investigator allotted one hour for each interviews; however, the length of individual interviews varied, ranging from 20 minutes to an hour. The initial questions were designed to be open-ended and they were followed up with a combination of open-ended and close-ended questions depending on the direction of the conversation between the primary investigator and the interviewee.

## **Procedure**

All procedures were approved by the Institutional Review Board of the University of the Pacific. Prospective participants received an email from the primary investigator with details about the study and an informed consent form. If interested, prospective participants were encouraged to reach out to the primary investigator to coordinate a mutually convenient meeting time and modality (Zoom or in-person). The majority of the interviews took place on Zoom, as many participants did not reside in the same geographical area as the primary investigator. There was one in-person interview, which took place at the University of the Pacific campus. All participants were interviewed individually by the primary investigator.

Participants were reminded at the start of each interview that the interview would be recorded and transcribed, and the primary investigator relayed how she would take steps to protect privacy and confidentiality. For the interviews that took place on Zoom, the primary investigator enabled live transcription and the interview was recorded and saved to the Cloud (so that the recordings would not be saved onto the primary investigator's personal laptop). The in-

person interviews were audio-recorded transcribed by hand. Both the transcription and the recording-device were stored in a locked cabinet in a locked faculty office upon concluding the interview.

### **Qualitative Data Analysis**

The study was conducted utilizing thematic analysis, in which the primary investigator identified patterns of meaning (i.e., themes) upon analyzing the dataset (Braun & Clarke, 2006). The primary investigator began by reading through the interview transcripts and taking initial notes. The sections of the dataset that were deemed to be relevant to the research aims were coded. After all the transcripts had been coded, the primary investigator reviewed, revised, and defined the final set of themes and subthemes.

## CHAPTER 4: RESULTS

Five themes were conceptualized from thematic analysis of the dataset, which drew from the experiences of SLPs and SLP students who have volunteered for one of the AAC camps held by the Diagnostic Center of Central California within the past ten years: (1) Many volunteers had some prior interest, if not experience, in AAC prior to volunteering for the camp; (2) Volunteers found that the AAC camp facilitated a supportive and collaborative learning environment; (3) AAC camp served as an opportunity for experiential learning; (4) Participation in AAC camp resulted in greater confidence and/or interest in AAC intervention; and (5) Intervention strategies learned while volunteering for the AAC camp.

**Theme 1: Many Volunteers Had Some Interest, If Not Experience, in AAC Prior to  
Volunteering for the Camp**

Volunteers' experiences with AAC prior to the camp varied widely, as some had reported having had experience with AAC intervention and others reported having had little to no experience. The study participants who possessed little to no experience stated that despite their lack of exposure, they had an interest and curiosity regarding AAC, and that their lack of experience was a key factor in their decision to volunteer, as they hoped they would learn more through their participation. One of these study participants, who volunteered for the camp as a student, explained her thought process prior to volunteering in detail: *"I think, at the time, in undergrad we didn't have a lot of exposure to what AAC was, and kind of how, when to use it, and what students it would be best suited for. I think, maybe we had like 2 slides, 2 or 3 slides in one language class kind of about AAC and different types of applications...So I was just very kind of intrigued and didn't really know what kind of AAC was until going to the camp, and then*

*that's when I, you know, learned a lot more, and then of course, in grad school we do have, you know, a class to kind of go more into depth with AAC. But undergrad I just I didn't have a lot of info about it. So I just decided to do the camp to kind of grow my knowledge."*

Among the volunteers who had prior experience, the type of experience varied, both in terms of the type of AAC in which they had experience and the amount of experience. For instance, some had been primarily exposed to low-tech forms of AAC and others had extensive experience with a wider variety of AAC, including high-tech SGDs prior to volunteering for AAC camp. One SLP volunteer reflected on her past experience with a very rudimentary form of AAC: *"So I worked at the developmental center where many of our clients who were non-verbal or had severe medical needs or you know physical needs we would provide them with and basically at that time Joanne, it was picture boards where they would try and point um or choices with pictures so the high tech that we got into was making mercury switches... they were very rudimentary so you would if you would touch...it's a mercury switch so um it connects on movement. There's a little mercury ball here and when it connects something happens."*

Another SLP volunteer stated that she had previous experience with high-tech AAC and that she mainly decided to volunteer to connect with like-minded peers: *"I knew a fair amount about AAC going into these things. The Academy was really more just a social thing for me. I don't wanna say social thing, because that makes it seem so unimportant, and it's not unimportant. Very important, but for me it was less about the education. Maybe more about supporting other peers who were already getting in, supporting some of my students that I knew needed additional supports, and then for me, getting access to peers for myself that I could collaborate with and work collectively."*

Interestingly, there was one study participant who expressed that rather than volunteering due to a prior interest in AAC, she needed to volunteer to gain more clinical hours towards graduation; however, she did have some experience with AAC through her experience as a behavior technician prior to studying speech-language pathology and at the university clinic during her graduate program.

### **Table 1**

*Theme 1: Many Volunteers Had Some Interest, If Not Experience, in AAC Prior to Volunteering for the Camp (Example Participant Quotes)*

---

*“When I was a practicing speech pathologist I used to work with a lot of clients that had AAC devices although they were very low tech that was a long time ago so I knew I had some information in that area but I was just interested to see just really interested in the new communication devices...”*

– SLP volunteer

---

*“So I applied just because I wanted to, and had experience working with kids with a on like using AAC devices.”*

*“So before I even got into the field of speech, I worked at a charter school that was specifically for kids with moderate to severe autism, and so I was kind of just a paraprofessional in the classroom... So I was in the youngest group, and all of them had access to an AAC device. So they all had either an iPad or I don't know what it would be called. It was like a lower tech talker but it's still like you put the sheets with the icons in, and it had different settings, but it was like very minimal choices. And then we also use like a picture exchange system, and then we also supported, like sign language, verbal, all the modes of communication. But everyone had access to some sort of AAC device..”*

– student volunteer

---

*“So I was in grad school, and we were taking the AAC class, and Professor Reece just offered it as an extra opportunity for those of us who were interested. And it sounded like a good experience. It was something that I really wanted to do, because I was interested in AAC, and we didn't have really access to AAC clients any other way.”*

– student volunteer, current SLP

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## **Theme 2: Volunteers Found That The AAC Camp Facilitated a Supportive and Collaborative Learning Environment**

Many volunteers expressed that they received meaningful feedback and were able to learn a lot from others, whether they be other volunteers or the camp director herself. One SLP volunteer recalled how the director of the AAC camp would provide assistance so she was not left unattended: *“You know she popped in and out and watched and tried to give suggestions and I thought that was really helpful too because you didn’t feel like you were all on your own.”* A student volunteer compared her experience at the AAC camp to her previous experience at a charter school supporting AAC users and noted that she received immediate feedback and greater overall support at the AAC camp: *“And I had support, too, where I wasn't like guessing as much because I knew more about the app, I had the supervisor watching me the full time, and the extra support of like Michelle and everything so if I had questions, or if I was doing something wrong, they saw it right away. So I wasn't making the mistake over and over again, whereas at the school, and I love the school don't give me wrong. They have they're a great program and everything But..I'm just.. that's the only comparison I have. So at the school setting as a paraprofessional, we had a little bit of training, but it was also like, do as you see fit and so I didn't have that, like immediate feedback of if I was doing what I was supposed to be doing or if that was the best way to do what I needed to do. And so the camp was really helpful in that sense for learning environment for myself, just somebody watching me do it”.*

Two SLP volunteers expressed that although they had extensive experience with AAC prior to volunteering, they still found value in the feedback and support they received from other volunteers at the AAC camp, especially when keeping accountable for utilizing best practices: *“Even after Academy it’s like the day is done right and then we go and look back at what we’ve*

*done through the day. So you know, in my clinical practice it's just me and a student or me in a classroom full of students. I'm not necessarily as aware of what I'm doing clinically as I am at Academy, right because things are just set up in a structure that you're using all of these tools, you're really focused in on core vocabulary, you're making sure that you're modeling appropriately, you're doing all of these things right...when you're out in the field, it's a little less discreet in a lot of ways.” “...so it's super valuable for us, and I need it, even though I have a lot of training. I still, and it's funny because I think Laura was saying something to me at camp like ‘Oh, we don't need to supervise you already know what you're doing’, and I'm like. ‘No, no, no, you need to supervise me’ because they always have more input or feedback, and what's considered a best practice, which you know doesn't always line up with what's considered an evidence-based practice. I'm not sure if you're aware of that or not but was considered best practice changes like very frequently.”*

## **Table 2**

*Theme 2: Volunteers Found That the AAC Camp Facilitated a Supportive and Collaborative Learning Environment (Example Participant Quotes)*

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*“Here we go, and I really liked my SLP, and just my whole group, like we had a perfect little foursome. The SLP above me.... I feel like it was just like a dream setup, and I kind of was able to learn from her. But also she let me try it out myself. So I just feel like it was a good little group that we could all kind of learn with each other. She kind of just like would model it a little bit, and then she would kind of watch me while I did it and just give me like a little bit of feedback.”*

– student volunteer

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*“It was really more like everybody was helping everyone, and it was really helpful, because if I had any question, someone would always like be there to help.”*

– SLP volunteer

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*“...so having someone there to collaborate with during that camp was helpful. I Don't think I would have felt confident, working with that client on my own. But having that experienced SLP was good.”*

– student volunteer, current SLP

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### **Theme 3: AAC camp served as an Opportunity for Experiential Learning**

Many study participants found that the AAC camp was a good way to gain real-life, hands-on learning experience that was not necessarily available otherwise. The difference between learning via formal education (e.g., classroom, textbooks, etc.) and learning through real-life experience came up frequently upon analyzing the interview transcripts. It was expressed that while the knowledge that they gained via more formal methods of education was valuable, it could not replace the hands-on learning experience that was gained through their time volunteering for the AAC camp. One SLP volunteer stated that *“really, it's one thing to sit in a course, and learn about aided language stimulation, and learn about core vocabulary, and learn about all of these AAC things right like all of these strategies that we use. It's another thing to put them into practice”*. A student volunteer indicated that she had similar sentiments by providing an example of a piece of knowledge that she did not have the opportunity to apply prior to participating in the AAC camp: *“The variety of activities we used in the camp really gave me experience with targeting core words or core vocabulary in a variety of settings and that's something that I had kind of learned about, but hadn't really had the opportunity to utilize it first, especially when I was in undergrad”*.

One SLP volunteer stated that as a practicing SLP, experience with AAC was harder to come by for those who did not already have a significant number of AAC users on their caseload: *“Once you move out like to the public school districts and you're not really working with a lot of children in special education that need it, and you just don't have the caseload for that, and then everything else that you have to do with school, and then you stop getting trained on it and update your skills. It really makes a big difference. So I have to tell you that at least being exposed to the camp really helped me see what else our kids are using”*. Along these

lines, two other study participants, who volunteered as students but now practice as SLPs, expressed that it was helpful for them to have had the experiential learning experience while they were in school: *“I know it's not super specific but for me the main thing was exposure, because I think once you're exposed to something, you know that it's an option and then if you're interested in it, or if you ever need to use it, you can go do your own research. And I think sometimes it's like you learn something in school, and you study it for the purpose of the class, but then, when you get out there in the real world, you have to go figure out how to apply it.”*, *“I think just the experience of using the device itself because that's something that definitely you're going to come across in your career. And you know it is intimidating, so at least having had a little bit of experience, you sort of feel like, ‘Okay, I can somehow figure it all out and manage it.’”*

Another student volunteer stated that she benefited from the expectation of volunteers to immerse themselves from the start of the AAC camp, as she believes that this greatly enhanced her learning experience: *“It's very easy, I think, to kind of take a step back, and like not really immerse yourself, and just kind of like observe, and I feel like she made me kind of, one like get in there and participate, even if it was a little uncomfortable for me, because I'd never used like a device before.”* She also drew comparisons to the experience of learning a new foreign language, in the sense that one must immerse oneself as much as possible in order to learn: *“The whole thing, I learned is just like, it's kind of like learning a different language, because I have a minor in Spanish, and I would say I always was kind of like, ‘Oh, the best way to learn is like you go immerse yourself in like a bubble of people that only speak Spanish.’”*

**Table 3***Theme 3: AAC Camp Served as an Opportunity for Experiential Learning (Example Participant Quotes)*


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*“I gained a lot of like knowledge that I don't think I would have gotten from class like I learned a lot from the class. But this really gave more more like hands on knowledge.”*

– student volunteer

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*“So there are a lot of pieces, a lot of pieces that you learn by. You might learn in theory, but you have to learn by doing..”*

– SLP volunteer

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*“And you're like, Okay, I read this in a book right? right? like I know how to do this on paper, but like, how do I put it into action?”*

– SLP volunteer

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**Theme 4: Participation in AAC Camp Resulted in Greater Confidence and/or Interest in AAC Intervention**

For the volunteers of the AAC camp, their time spent volunteering increased their confidence with AAC intervention. Many participants expressed that their experience with the AAC camp helped them to reach a greater comfort level with AAC intervention in their respective clinical settings post-camp. A student volunteer indicated that if not for the experience, she would not be comfortable taking initiative with her clients with CCNs at her externship placement: *“I would have just really been like this isn't like my expertise, like I'm just going to observe [my supervisor] like a little more. But yeah, I think I would just kind of not step into it as willingly. Honestly, I think I would kind of take the back burner a little bit more than I do now.”* Another student volunteer (now an SLP) stated that the experience helped her to become more comfortable with feature-matching a student to a device if necessary and providing push-in services for students with CCNs: *“I think I gained like an increase in comfort level with like AAC therapy. And just kind of generally speaking, I feel comfortable or more comfortable. I'm still learning, of course, but more comfortable pairing a student with an AAC device, maybe*

*with a student that doesn't have one depending on what their goals are, if they're or if I'm you know, pushing in, and I feel more comfortable going into the classroom to support the student instead of pulling out for a very you know specific instructional activity I think it helps make me more well-rounded as a clinician.”* In addition, another volunteer, who is also an SLP that volunteered as a student, stated that her experience with AAC camp helped her to be more proactive about initiating the AAC assessment process than SLPs with less experience may be: *“But ultimately it has to start with us and we have to go to [the assistive technology specialist]. So if there's not an SLP on the case, then the child usually won't get AAC. The other thing I'm seeing is that we have so many people that are pro PECS and they're stopping at PECS, and they're not moving beyond PECS, and we have all these kids who all they can do is icon exchange and they don't have any functional communication. So for us to know that AAC's an option, especially for some of our mod-severe kids, is really awesome.”*

For some volunteers, their experience at the AAC camp not only increased their confidence in their ability to provide AAC intervention, but also significantly increased their interest in AAC. Two volunteers in particular gave credit to the AAC camp for making them interested in specializing in AAC. One student volunteer (now an SLP) stated the following: *“I have a very big interest in AAC now. I think that really had to do with going to the camp. I think everyone in our field kind of chooses an interest or a specialty that they kind of really want to work with, whether that be language, artic, swallowing, early intervention. And so before that I never really thought like ‘Oh, AAC is going to be it for me, that's what I want to kind of specialize in.’ And after going to the camp, I think the first time I was like ‘Wow, you know, I really do enjoy this. I enjoy working with kiddos who use devices.’ And being able to see, you know, them get super excited when they're finally, you know, being able to request something,*

*and you understanding what that thing is.” An SLP volunteer went through a similar shift in her career and clinical interests – while she had prior experience with AAC working with the moderate-to-severe population, she now specializes in AAC, which she attributes to her experience at AAC camp: “I was not expecting that I would be falling into a career where AAC is now what I do. I mean that's what I do. I've been hired onto 3 different districts. In my last 3 districts that I worked for, I was the primary AT specialist...I wasn't expecting that my clinical practice really would become assistive technology and AAC”.*

One student volunteer stated that while she is not necessarily interested enough in AAC to go out of her way to pursue it, she still feels that her time at the AAC camp increased her confidence in her ability to provide AAC intervention should she need to do so in the future: “...it doesn't interest me as much, but this definitely gave me like this confidence and I'm able to kind of look back and say, ‘Oh, you know what I remember doing this, and this and that I'm going to try it with my future client’, or you know. So it definitely gave me that experience.”

#### **Table 4**

*Theme 4: Participation in AAC Camp Resulted in Greater Confidence and/or Interest in AAC Intervention (Example Participant Quotes)*

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*“And so now I'm still doing my CF right now, so not too much time to be able to specialize in something. Especially you know, not being able to count those CEU courses. But I do very much so intend to go back to the Diagnostic Center. I know that they offer AAC classes. So it really just kind of opened my eyes to this kind of specialty in our field. And really just kind of drove me to being super interested in it.”*

*– student volunteer, current SLP*

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### **Theme 5: Intervention Strategies Learned While Volunteering for AAC camp**

Throughout their time volunteering for the AAC camp, study participants learned the following intervention strategies: modeling, providing wait time, and involving a typically developing peer to facilitate communicative opportunities.

#### **Modeling**

The majority of the volunteers, especially those with little-to-no prior experience with AAC intervention, stated that modeling was the main strategy that they learned from their participation in the AAC camp. Aided language stimulation, an intervention strategy in which the communication partner models both spoken words and words on the AAC user's communication system (Ronski & Sevcik, 1988), was utilized, although many volunteers did not explicitly use the term itself: *"You know to communicate with your client, you use their communication board as well, and I had never thought about that and oh my gosh of course, that just seemed so basic of a tenant that would have been something that I wish I would have known earlier so I could have implemented that sooner."* One student volunteer stated that in addition to modeling with the child's AAC system, they also learned the importance of utilizing the concept of Brown's Stages of Language Development (Brown, 1973) to model at the appropriate language level for the child: *"Oh, she also taught me how to use the Brown's Stages. So that's one thing that I learned like completely new is that we're using Brown's Stages. Even during the therapy of AAC using AAC right so you're looking at where your client is in terms of their stage. And then you are using the AAC based off that."* Another student volunteer expressed the similar idea of modeling at the child's language level, although she did not explicitly reference the Brown's Stages: *"A lot of it was modeling, and so I try to model kind of what I thought I was supposed to be modeling and like. That was just like as much as I could, just like the language*



*that I would use. And so a lot of what I learned was like modeling what the child's level is at which makes sense because that's what we do when we talk. But for some reason the first day at least, I was trying to model like everything, and so I feel like meeting the child where they were at was a big thing for me."*

### **Providing Wait Time**

Although not a strategy to directly stimulate language development, there were volunteers that mentioned that they learned to provide adequate wait time during their interactions with the camp participant. One SLP volunteer referenced the strategy of *Observe, Wait, and Listen (OWL)*, a term coined by the Hanen Centre to emphasize the importance of waiting patiently to observe what the child may say instead of "taking over" the interaction: *"You know, learning to give a person a chance that you know. Observe. Wait, Listen."* A student volunteer expressed that the camp participant in her group was a fairly independent AAC user, and since she was not previously used to this, she had to learn to provide wait time instead of prompting for a response right away *"In a way of when I would ask him a question. I would immediately be like, use, use your iPad, or when he already was, or you know, it was just little things like that that I had to step back and be like, wait for his response."*

### **Involving Typically Developing Peer**

Some of the study participants mentioned that they were able to have the typically developing peer help to facilitate the AAC intervention process. One SLP volunteer was working with a camp participant with many physical limitations associated with Rhett's Syndrome, so they had the typically developing peer physically manipulate the activity while having the participant focus on using her AAC system to communicate what she wanted him to do: *"So actually giving her, kind of putting the onus on her, so that she would only have to use*

*the communication board instead of all these physical things that were really difficult for her. To try to transfer the physical part to her partner. So I thought that was a really good idea too. You want your clients to feel like they are really involved in it and so you don't want to say physically she can't do this and that's it but this was a good way for her to also buddy up with her peer and get him involved".* A student volunteer (now SLP) recalled having the typically developing peer in her group model on the camp participants' AAC system, such as "...*having the peers you know, request things with their device, or comment things on the device, and then show the student. Oh, you know, this is this is how you do it, or this is what you do.*" Another student volunteer used the presence of the typically developing peer to model a variety of communicative functions, namely requesting, turn-taking, and talking about emotions: "*I would give my iPad to the peer and say, 'hey, you know, you guys are going to play a game right now. I really want you to make sure that he's requesting more right, and then making sure that he's stating when it's his turn when it's your turn and then just see if there's anything that he will say like 'Oh, maybe he might say feeling happy or I'm happy' ...*".

**Table 5**


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*Theme 5: Intervention Strategies Learned While Volunteering for AAC Camp (Example Participant Quotes)*

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Modeling

*"As he was doing activities, we would sort of model, like a couple of like words in a front, or maybe even single words on the talker, so like pushing it on the talker. So that he's hearing it as It's like you would do for a speaking, student where you would say kind of what they're doing as they're doing it, but doing it on the device?"*  
 – student volunteer, current SLP

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(Table 5 Continued)

Modeling (continued)	<p><i>“If you want the child to use the device you have to model. It's just like modeling the oral language, the spoken language. So that's something we're in the camp we were we realized the importance of showing utterance over, and over, and how to break it down.”</i></p> <p>– student volunteer, current SLP</p>
Providing Wait Time	<p><i>“you know the modeling piece and also letting giving that wait time. Cause it you know it's easy to kind of take over and want to do everything for them. And letting them find their path. So letting them find their way on it and explore”</i></p> <p>– SLP volunteer</p>
Involving Typically Developing Peer	<p><i>“...we asked instead of her having to do everything especially the physical things which was really hard for her, for her to give directions to her peer so that he could do it. And he was so good, you know, he was a really good participant and he was willing to do those kind of things”</i></p> <p>– SLP volunteer</p>

## CHAPTER 5: DISCUSSION

The purpose of this qualitative study was to determine the effectiveness of the AAC camp model as a pre- and post- service training program for speech-language pathology students and practicing SLPs. It sought to do this by conducting and analyzing semi-structured interviews with those who volunteered for one of the AAC camps held by the Diagnostic Center of Central California within the past ten years. Upon analyzing transcripts of the semi-structured interviews, the following themes were conceptualized: (1) Many volunteers had some type of interest and/or experience with AAC prior to AAC camp, (2) Volunteers found that the AAC camp facilitated a supportive and collaborative learning environment, (3) AAC camp served as an opportunity for experiential learning, (4) Participation in AAC camp increased confidence and/or interest in AAC intervention, and (5) Intervention strategies learned while volunteering for the AAC camp. Initially, it may sound somewhat self-explanatory that those who volunteer for the AAC camp would be at the very least mildly interested in AAC; however, graduate students in speech-language pathology need to meet a specific number of clinical clockhours to graduate, and this may influence students' decisions to take on any opportunities to gain additional hours even if they do not possess interest in the particular area of practice. There was one study participant, a student volunteer, who admitted that although she had some prior experience with AAC, it was initially not an area of interest for her, but she volunteered for the AAC camp to obtain more hours needed to graduate. However, she, along with other study participants, did express that her time volunteering for the AAC camp increased her confidence in AAC intervention.

Many study participants expressed that the AAC camp facilitated a learning environment in which they could lean on others for support, whether they had minimal to no previous experience or even if they had extensive experience in their clinical practice. Within the AAC camp model, volunteers are expected to immerse themselves immediately, which could potentially be very intimidating for those with a lack of previous exposure to AAC; however, the volunteers all had access to someone who would provide them immediate feedback, such as the AAC camp director or more experienced SLPs. It was not just the volunteers with little to no experience that leaned heavily on this support – volunteers who had extensive previous experience found that the collaborative environment helped them to refine their practices and held them accountable for utilizing best practices for AAC intervention because they had access to peers that would provide them with meaningful feedback. Given what they shared, the value of the collaborative atmosphere for volunteers with extensive experience with AAC should not be underestimated. While it may be easy to assume that those with plenty of previous experience may not require this type of support, all students and practicing SLPs possess some clinical blind spots, and therefore, would benefit from a safe environment where they can be made aware of how they can improve their current practice.

Many volunteers, especially student volunteers with little to no previous experience with AAC, found a lot of value in the immersive, hands-on nature of their role as a volunteer for the AAC camp. While the value of learning from a more formal means of education (e.g., textbooks, readings, classroom) should not be undermined, volunteers stated that their participation in the camp gave them real-life exposure to AAC in a way that cannot be replicated by more formal means of education. In other words, more formal education methods may be effective in relaying important information about AAC, but the AAC camp model provides an

opportunity for volunteers to directly apply the knowledge in its context, and essentially, “learn by doing”. These sentiments illustrate the need to fill the gap in experiential learning opportunities in AAC, as it is entirely possible for someone to possess a great deal of knowledge about AAC and best practices for assessment and intervention but lack the experience and skills to effectively implement that knowledge. (Beukelmen & Mirenda, 2013; Johnston, Blue, Gervarter, Ivy, & Stegenga, 2020).

Volunteers expressed at the bare minimum, an increased confidence in their ability to provide AAC intervention after having participated in the camp – some expressed that in addition to gaining more confidence, they became significantly more interested in AAC. In particular, some who volunteered as students noted that their time spent during AAC camp prepared them to provide AAC intervention to those with CCNs in their respective clinical settings post-camp. Some expressed that AAC became a major clinical interest after having participated in the camp; however, even the one student volunteer for whom AAC is not necessarily an area of interest still noted that after having volunteered, she felt that she is more confident in providing AAC intervention should she need to do so in the future.

The volunteers reported having learned the following AAC intervention strategies throughout their time participating in the camp: modeling, providing adequate wait time, and involving a typically developing peer to facilitate communication opportunities. Interestingly, the learned intervention strategies were not necessarily specific only to AAC intervention but general language intervention strategies that are typically used even with non-AAC users. The exception to this would be aided language stimulation, in which the communication partner models the desired utterance both verbally and on the individual’s AAC system (ASHA, n.d.), but even this method is very similar to the type of modeling utilized in non-AAC specific

language intervention. This suggests that the AAC camp model is effective in teaching volunteers how to apply general language intervention strategies within the context of AAC intervention.

### **Limitations and Gaps in Research**

Although AAC camps have been around for a very long time, there are very few research studies on the topic. The very few research studies on AAC camps focus on the language outcomes of the AAC users themselves and not on the experiences of those who volunteer as students or practicing SLPs with the intention of learning more about AAC intervention. This study sought to conduct a qualitative inquiry to determine the effectiveness of the AAC camp model as a pre- and post-service training opportunity for students and practicing SLPs. However, this study has some limitations. This study was conducted solely on the AAC camp model implemented by the Diagnostic Center of Central California. While the Diagnostic Center of Central California has been holding AAC camps for over a decade, there are other AAC camps held in various geographical areas. These camps share many core similarities, in the sense that they are modeled after the typical summer camp experience, they are all run slightly differently, and there may be parts of this study that do not readily apply to other AAC camps. In addition, the primary investigator acknowledges that there may be some sampling bias involved, in the sense that those who've had a positive experience with the AAC camp may be more willing to volunteer their time for an interview.

### **Direction and Implications of Study**

As stated above, it is important to consider that while many AAC camps exist, program aims differ across these camps. For instance, while the AAC Academy hosted by the Diagnostic Center of Central California includes many practicing SLPs as participating volunteers, other

AAC camps may not include SLPs as volunteers. On the other hand, some AAC camps do include practicing SLPs as a part of their model but use them exclusively as supervisors to students rather than having SLPs volunteer alongside them. It is also important to note that this study was conducted utilizing semi-structured interviews of those who volunteered for the AAC Academy, and that their perspectives may differ from volunteers of different AAC camps. Given that there are limited studies that seek to examine the effectiveness of AAC camps as a pre- and post- service training model from the students and SLPs that volunteer for them, more research should be conducted on this topic across various AAC camps (especially in different geographical areas).



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## Appendix A: Letter of Informed Consent

**Research Title:** The AAC Camp Model as a Pre- and Post-Service Training Program

**Primary Investigator:** Joanne Kim

**Faculty Advisor:** Benjamin Reece

**Purpose of Study:** You are being invited to voluntarily participate in a research study on the effectiveness of the AAC camp model as a pre-service training program for current speech-language pathology graduate students and as a post-service training program for practicing speech-language pathologists. You will be asked to participate in an interview with the primary investigator, either on Zoom or in-person at a mutually convenient time.

**Time Involvement:** Your participation will take approximately 40-60 minutes.

**Risks:** The risks associated with this study are no more than experience in daily life. Participants may experience anxiety associated with the interview process depending on their level of comfort. In addition, if you have a personal relationship with the primary investigator, you may feel obligated to participate in this study. The primary investigator will make every attempt to mitigate these risks by allowing participants to skip any questions or stop the interview process at any time. In addition, should you decide not to participate or withdraw participation at any point during the interview process, this will not affect your relationship with the primary investigator in any way.

**Benefits:** Participants will not benefit directly from the study. They will, however, have the opportunity to share their experiences regarding AAC camp and whether their participation was beneficial to increasing their clinical competence in this area. The information they share will be used to inform the field of speech-language pathology regarding best practices in pre- and post-service training in AAC.

**Compensation:** No compensation is being offered for participation.

**Confidentiality:** There is no intention to share identifying information. While it is impossible to guarantee confidentiality, the primary investigator will take the necessary precaution. Responses to interview questions shared during Zoom interviews will remain encrypted in the cloud, and written transcriptions of responses shared during in-person interviews will remain in a locked cabinet in a locked faculty office.

### Contact Information:

**Questions:** If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the primary investigator at [j\\_kim218@u.pacific.edu](mailto:j_kim218@u.pacific.edu) or the faculty advisor at [breece@pacific.edu](mailto:breece@pacific.edu).

***Independent Contact:*** If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact Office of Research and Sponsored Programs to speak to someone independent of the research team at (209)-946-3903 or [IRB@pacific.edu](mailto:IRB@pacific.edu).



## **Appendix B: Interview Questions**

1. Why did you decide to participate in the program?
2. Why do you continue to come back? (if they have previously participated)
3. What was your previous experience with AAC?
4. Describe your experience volunteering for the program.
5. What specific AAC systems did you learn about or learn to use?
6. Describe specific intervention strategies that you learned. What did you learn that you didn't anticipate?
7. What did you gain from your participation that you plan to apply to future practice?