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**Online Journal of Missouri Speech-  
Language-Hearing Association  
(OJMSHA)**

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Speech-Language-Hearing  
Association**

## Scope of OJMSHA

The *Online Journal of Missouri Speech-Language-Hearing Association* is a peer-reviewed, interprofessional journal publishing articles that make clinical and research contributions to current practices in the fields of Speech-Language Pathology and Audiology. The journal is also intended to provide updates on various professional issues faced by our members while bringing them the latest and most significant findings in the field of communication disorders.

The journal welcomes academicians, clinicians, graduate and undergraduate students, and other allied health professionals who are interested or

engaged in research in the field of communication disorders. Interested contributors are highly encouraged to submit their manuscripts/papers to [msha@shomemsha.org](mailto:msha@shomemsha.org). An inquiry regarding specific information about a submission may be emailed to Jayanti Ray ([j-ray@bethel.edu](mailto:j-ray@bethel.edu)).

Upon acceptance of the manuscripts, a PDF version of the journal will be posted online during August or September. This publication is open to both members and nonmembers. Readers can freely access or cite the articles.

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## **Team Perspectives of Interprofessional Practice with Augmentative and Alternative Communication Users**

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### **Abstract**

Interprofessional practice (IPP), or the collaboration of multiple professions, is necessary to improve patient outcomes when providing services to users of augmentative and alternative communication (AAC). The World Health Organization (WHO) (2010) defines interprofessional collaborative practice as “two or more professionals effectively collaborat[ing] together to improve outcomes for the quality of care for their patients” (p. 13). Various authors have emphasized the need for collaboration as well as its effect on patient care (Littlechild & Smith, 2013). Although speech-language pathologists (SLP), physical therapists (PT), and occupational therapists (OT) often recognize the importance of a collaborative approach to AAC users, interprofessional practice has remained inconsistent. The goal of this research was to establish the benefits and barriers of IPP, as well as ways to improve the readiness of professionals to provide collaborative care when they join the workforce. The study included 10 SLPs, 5 PTs, and 5 OTs who were recruited via social media groups relating to each discipline, and emails that were directed to larger AAC teams across the United States. Participants completed a 10-15-minute interview via Zoom. Interview questions pertained to personal opinions regarding the perceived benefits and challenges of IPP. The study's findings revealed that while IPP with AAC users is supported by all professionals and should be used much more frequently, it can be challenging to implement because of staffing issues, scheduling conflicts, and individual circumstances.

*Keywords:* augmentative and alternative communication, interprofessional practice, speech-language pathologist, physical therapist, occupational therapist

## Introduction

AAC comprises processes that augment, replace, or complement natural speech for any individual with a variety of communication deficits (Elsahar et al., 2019). AAC was created as a way for individuals to communicate most efficiently, to express wants, needs, thoughts, information, and ideas. Special augmentative aids may lead to greater feelings of self-worth, educational performance, and interactions with a variety of communication partners. AAC can be considered light-tech/low-tech, meaning that there is no need for technology or electronics to communicate. Examples of light-tech/unaided AAC can include manual signing, gestures, and pointing to pictures. High-tech/aided AAC are electronic devices that often allow for the use of speech output. These devices are often referred to as speech-generating devices (SGDs). When selecting an AAC system, it is essential to consider multiple variables that will allow for functional communication with a variety of communication partners. Based on the complex communication needs and distinctive skills of each patient, there is no standardized diagnostic instrument available for analyzing and assessing AAC users. To find a form of communication that best fits the individual, a highly interactive process and comprehensive evaluation of skills and preferences are necessary. Though there are no clear prerequisites to AAC, the complex process of matching includes consideration of language, motor, cognition, and sensory skills.

Research indicates that approximately one percent of individuals experience a speech, language, or communication deficit to some degree (Elsahar et al., 2019). Today, AAC is utilized by approximately two million children and adults to express daily wants/needs (USSAAC, 2022). Impairments in speech-language production span a wide variety of ages, genders, disabilities, cultural/ethnic backgrounds, and socioeconomic classes. Populations who might benefit from AAC include those with Down syndrome, autism spectrum disorder (ASD), cerebral palsy (CP), acquired conditions including traumatic brain injury (TBI) and stroke, and degenerative neurological conditions, such as amyotrophic lateral sclerosis (ALS). For some individuals, AAC will be a permanent addition to communication, and for some, it will be temporary.

According to Beukelman and Light, (2020), the primary purpose of AAC is to empower all individuals with non-functional verbal communication to engage and communicate in all aspects of daily life. Due to the wide variety of communication deficits that may result from disabilities and conditions, all relevant healthcare members must work as a team to improve the care provided to these patients. Collaborating with other professionals can aid in identification, referral, assessment, and treatment. The members associated with this collaborative approach for AAC vary depending on the patient and their needs but are not limited to physicians, nurses, speech-language pathologists (SLPs), physical therapists (PT), occupational therapists (OT), psychologists, and educational personnel (Beukelman & Light, 2020). Regardless of the setting, the team can guarantee that all AAC requirements are considered and fulfilled (Beukelman & Light, 2020). These professionals provide their expertise to address motor, cognitive, sensory, language, and psychosocial functioning to identify all characteristics of the client. When potential users of AAC have physical disabilities that impact their motor control, a PT and OT should be referenced. While the SLP is working to select the most appropriate language system, the OT is working to address visual and sensory systems, while the PT contributes by assessing positioning and overall gross motor control.

Patients can receive accessible care and an all-encompassing holistic approach through interprofessional collaborative care (Uthoff et al., 2021). The World Health Organization (WHO) defines interprofessional collaborative practice as "when two or more professionals effectively collaborate to improve outcomes for the quality of care for their patients" (2010). Since the mid-1970s, healthcare workers and researchers have declared that IPE can be proven to play a crucial role in the improvement of health services (Brandt et al., 2014). Based on the World Health Report published by WHO in 2010, a reinforcement of its support of a collaborative role was established, based upon the creation of the Framework for Action on Interprofessional Education and Collaborative Practice. The "triple aim" of IPP has been drawing attention to a generalized need to fix the US healthcare system by reducing costs, increasing patient satisfaction, and improving the quality of care (Brandt et al., 2014).

The evaluation and treatment processes for AAC users are enhanced by the contributions of each team member, but collaboration must provide sufficient outcomes, such as improved AAC care. Authors have emphasized the need for collaboration as well as its effect on patient care (Busari et al.,

2017). Through observation in healthcare, it has been proven that IPP has magnified the awareness and knowledge of each professional's skill set (Busari et al., 2017). Although SLPs, PTs, and OTs actively participate in the care of AAC users, interprofessional practice has seldom been consistent, particularly in the school system. Ludwig & Kerins, 2019). There is a limited amount of updated research about the subject of IPP, with most studies originating outside of the United States (Kastner, 2021).

### **Literature Review**

Individuals with severe communication disabilities often exhibit medical, cognitive, and social comorbidities. Therefore, there is not a single professional who can successfully identify and provide care for all aspects, needs, challenges, and dreams of an individual (Bridges et al., 2011). The American Physical Therapy Association (APTA), the American Occupational Therapy Association (AOTA), and the American Speech-Language-Hearing Association (ASHA) all support the Interprofessional Education Collaborative ("Core Competencies," 2016). ASHA utilizes IPE approaches for SLPs engaged in IPP (Disabilities Education Act [IDEA], 2004). According to Giangreco (2000), as cited in Weiss et al., (2020), when a collaborative approach is not utilized, individuals risk the creation of discipline-specific goals, increased utilization of pullout approaches, isolated decision-making, and confusion from family members. There are essential components to the interprofessional approach: (a) a structure must be set to monitor and address the performance of all team members, (b) professionals must discuss any issues that arise during care, (c) regularly scheduled face-to-face meeting time must occur (d) and assigned and agreed-upon roles of all team members should be established (Nancarrow et al., 2013).

In 2002, AHA, APTA, and AOTA collaborated to develop guidelines when providing collaborative care (Sylvester et al., 2017). All three organizations have guidelines in place for collaborative practice within therapy sessions. Though these guidelines are important, the evidence base for collaborative care among PTs, OTs, and SLPs remains limited (Sylvester et al., 2017). With the collaboration of the interdisciplinary team, AAC users are set up to receive the best quality treatment. Success with AAC is highly dependent upon collaborative care, but there are several challenges associated with delivering services (Chung & Stoner, 2016). Challenges might consist of limited use of AAC, lack of knowledge regarding the systems, and inadequate training which can lead to device abandonment and increased levels of frustration for the user (Chung & Stoner, 2016). A meta-synthesis of 10 qualitative studies evaluated the outcomes of working professionals supporting AAC users. The results showed that participants in every study reported a range of positive outcomes from IPP, such as improved professional knowledge of AAC, altered attitudes, and an increase in children's communication competency and opportunities for functional interactions in the environment (Chung & Stoner, 2016).

IPP has been a popular topic for many researchers. Duffy and Eaker (2017) state that metrics of collaborative successes are discernible in several forms, including recognition of shared objectives, equal valuation of diverse expertise, open and mutual sharing of expertise, equality amongst teammates, consensus-based decision-making, and a collective approach to responsibility and accountability. All disciplines can learn how to collaborate and value one another's skill sets by operating as a team. While an interdisciplinary approach allows the two professionals to deepen their knowledge of skills, the transdisciplinary approach was designed to take this knowledge from two or more disciplines and apply it to a variety of cases (Helmane & Briška, 2017). The transdisciplinary approach (TA) is identified as one of the best practices in early intervention and education settings (Weiss et al., 2020). Many studies have investigated the importance of this collaboration approach and have found that TA allows for increased coordination of services, maximized communication and professional cooperation, communication with families, reduction of conflicts and confusion, and a shared vision among all (Weiss et al., 2020).

However, there are several reported barriers to the concept of IPP. Grant and Fincocchio (1995) created a model curriculum and resource guide expressing the common barriers to IPP in a healthcare team. This guide was split into four types of limitations: organizational factors, barriers at the team level, barriers among individuals, and barriers for independent providers. Lack of knowledge and appreciation for other disciplines, financial complaints, and limited IPP research are some of the largest organizational barriers presented in the research. Barriers at the team

level include inadequate decision-making, lack of training in IPE, and time. Individual team members might feel a split loyalty between their team and their discipline, gender, race, or class-based prejudices, and multiple responsibilities. The challenges faced by independent providers may include the assumption of full responsibility and limited interest in allowing others in the decision-making process (Grant & Fincocchio, 1995). Research supports the idea that professionals make assumptions and place stereotypes on other disciplines, thus contributing to major challenges in creating positive interprofessional teams (Eriksson and Müllern, 2017). IPP can be challenged by professions that lack knowledge about clinical effectiveness, are resistant to change, and lack partnership education. (Rawlinson et al., 2021). Research also supports the belief that hierarchical organizational structures impact collaboration among healthcare members Eriksson & Mulhern, 2017). This hierarchical belief can affect the overall morale of team members, thus leading to inadequate patient care.

To prepare professionals for the workforce, interprofessional education (IPE) is crucial. WHO (2010) defines IPE as “students from two or more professions learn[ing] about, from, and with each other to enable effective collaboration and improve health outcomes.” (p. 13). Multiple researchers have found that successful IPE allows for effective clinical care (IPE Six Case Studies, n.d). To provide efficient person-centered care, the Institute of Medicine (IOM, 2011) states that all health providers should be educated regarding collaboration. Reeves et al. revealed 15 research studies reporting the effectiveness of IPE compared with little to no education. Those with prior education regarding IPP demonstrated higher patient satisfaction, cooperation among professionals, lower error rates, and stronger mental health considerations of the patient (Reeves et al., 2013). Additionally, research suggests that when teaching students about IPP early in their educational careers, positive impacts occur. Increased knowledge of healthcare professions and the desire to work collaboratively have been demonstrated across PTs and OTs (Trojanowski et al., 2021). Doctorate students in PT and OT discussed professional identities and collaboration between their respective fields in this study. Students completed the 19-question Readiness for Interprofessional Learning Scale (RIPLS), which was graded on a 5-point Likert scale before and after the meeting. The findings showed that the students desire to keep learning more about teamwork to improve efficiency during the rehabilitation process while allowing team members to devote more time to the patient.

Regardless of the amount of literature emphasizing the importance of IPE, this is not the norm among many programs. According to a study regarding medical students’ educational history, almost 25% of the survey participants indicated that they did not receive any form of IPE within their program’s curriculum (Zechariah et al., 2019). In many SLP, PT, and OT programs, there are typically no set courses regarding IPE, but the Council on Academic Accreditation (CAA) for speech-language pathology includes IPE within several standards (IPE Six Case Studies, n.d). According to an SLP program study completed by Wallace in 2017, only six out of 24 SLPs reported learning about the competency domains of IPP in their medical courses, and even fewer stated that it was mentioned in other SLP courses. Five students stated that IPP was not covered in their graduate program (Wallace, 2017). In 2014, a study was completed regarding IPE within professional advanced educational programs. The School of Health and Medical Sciences at Seton Hall University is a prime example of a school that began implementing IPE into undergraduate and graduate programs for SLPs, PTs, OTs, and other related healthcare fields. A study was completed to evaluate the benefits of IPE by having students and staff complete a pre- and post-questionnaire. Results conclude that the students believe they have a stronger understanding of IPE and the importance of collaboration with others (Neubauer et al., 2014). Though IPE has been implemented in a few programs, it is not meeting the needs of all patients.

### ***Purpose***

This study sought to determine the strengths and limitations of IPP, the educational levels of participants regarding collaborative care, and the strategies found to overcome limitations. AAC users, and suggestions for change regarding IPP. Data were collected through interviews with SLPs, PTs, and OTs. Interview questions covered topics such as individual perspectives on the benefits and challenges of IPP, educational levels, strategies to address IPP's difficulties, and suggested improvements for the collaborative care space.

### **Research Questions**

1. What do physical therapists, occupational therapists, and speech-language pathologists identify as the strengths and limitations of interprofessional practice?
2. How much education did SLPs, PTs, and OTs receive regarding interprofessional practice?
3. What strategies do PTs, OTs, and SLPs feel are successful in eliminating or reducing barriers to collaborative practice?
4. What changes should be implemented to improve interprofessional practice?

### **Method**

An IRB was obtained and approved by the Southeast Missouri State IRB (see Appendix B). A phenomenological qualitative methodology was used to determine the personal perspectives of SLPs, PTs, and OTs on providing IPP to AAC users of all ages. To learn about each participant's perspectives and methods for approaching IPP while taking into consideration the complex communication needs of patients, the researcher conducted semi-structured interviews (see Appendix A). The semi-structured interviews allowed for open-ended responses from participants provided qualitative data, and allowed respondents to provide novel experiences. To identify potential participants, the researcher utilized social media groups related to the areas of speech-language pathology, physical therapy, and occupational therapy. Additionally, emails were distributed to AAC teams throughout the United States by searching for AAC clinics contacting their therapists, and identifying AAC specialists through national associations for PTs and OTs. Interview participants consisted of licensed professionals from the three disciplines. To be included in the study, participants were required to have graduated from an accredited program and served on an AAC team while providing IPP. Unlicensed, undergraduate, and current graduate students in the areas of speech-language pathology, physical therapy, or occupational therapy were not eligible to participate in the study. All professionals with no prior IPP experience while working with an AAC user were not included.

### **Participants**

Ten SLPs, five PTs, and five OTs all took part in the study. Each professional had treated at least one AAC user and had completed a master's or doctoral program recognized in the US. Each participant held an active license, was actively practicing, and had at least a year of experience in the selected field. With most patients treated in educational settings, most responses were based on pediatric experience. These individuals contributed to the professional knowledge base of interprofessional practice and results can be used to aid in future professionals' interprofessional practice. Participants provided verbal informed consent (refer to Appendix C) and their identities are protected in this article using pseudonyms.

### **Data Collection Tools and Analysis**

The original interview questions created by the researcher were reviewed to determine the perceived strengths and limitations of IPP, the educational levels of all participants, and successful strategies used by professionals to eliminate barriers of IPP and to identify areas of revision that could be made to improve collaborative care with AAC users. The interview consisted of 14 questions (refer to Appendix A) related to the professional's current setting, comfort level with collaborating with AAC users and other professionals, benefits and barriers of interprofessional practice, and interprofessional education (IPE). The researcher compared the interview responses of all participants, utilizing a conventional content analysis approach, meaning that coding categories were created directly from data received (Hsieh & Shannon, 2005). Participants' personal information was de-identified using pseudonyms to protect their identity.

### **Results**

A semi-structured Zoom interview was conducted with SLPs, PTs, and OTs to answer research questions about the differences between interprofessional practice and education. The interview consisted of open-ended questions targeting specific areas of IPP and IPE. See Appendix A for a list of interview questions.

Responses were obtained from 30 participants who provided complete interview responses. See Table 1 for participant demographics.

**Table 1***Participant Demographics*

Discipline	<i>n</i>
Speech-language pathologist	10
Physical therapist	5
Occupational therapist	5
Setting	<i>N</i>
Educational	10
Medical	7
Private practice	3
Number of AAC Users	<i>N</i>
1-10 users	12
11-40 users	6
<41 users	2
Age of Users: Pediatric/Adult/Both	<i>N</i>
Pediatric only	18
Adult only	0
Both pediatric and adults	2
Time Provided to AAC Users (min/week)	<i>N</i>
>30 min/week	1
30-60 min/week	16
<60 min/week	3

**Research Question One**

What do SLPs, PTs, and OTs recognize to be the strengths and limitations of IPP for AAC users?

A total of 6 dominant themes emerged from participant responses to interview questions. Refer to Table 2 for the frequency of responses to each theme, and Table 3 for sample quotes.

Regarding the strengths of IPP for AAC users, 6 participants, or 30% (n=6) reported “knowledge growth for the professionals involved” to be a major benefit to IPP. One SLP participant stated:

IPP fills in knowledge gaps. Especially, what I don't know about access, an OT or PT could help me with that. Also, knowledge about the individual is beneficial because I might see them for 30 minutes and we do similar activities every time, but a different professional working with them may have other ways that they've noticed that really engage that patient.

One OT reported the following about knowledge growth:

I think that the more people that you have to look at an issue or look at a problem, the more potential solutions you come up with, and the more problem-solving you can do. Someone may have an idea that doesn't quite work and someone else can come along and see where it's breaking down and make a suggestion for changes.



One of IPP's main advantages, according to three participants (n=3, 15%), is that it advocates for further AAC use. "I think the more familiar you are with AAC, the easier it is for people to pick up", said one OT, "So, the more you collaborate, the easier it is to understand, and the less scared people are of it, especially those who aren't as comfortable with using technology." Additionally, one SLP reported her opinion on how IPP can help advocate for AAC users:

Some disciplines are unfamiliar with AAC in general. There are a lot of myths surrounding AAC particularly, high-tech, and so it gives me the opportunity to provide education, and training, and kind of broaden the field of what these individuals are capable of. Often individuals are labeled in a certain way where expectations are lower, when it is really not the case. So being able to provide that education and just open up the opportunities for clients has been the most beneficial.

SLPs, PTs, and OTs (n=4, 20%) also agreed on the advantages IPP offers the AAC user. One SLP stated, "If you are too tunnel-visioned in your discipline as a professional, you rob these children of their ability to have communication, which in my opinion, is a human right." One PT recognized the strengths of having all professionals' skill sets used for client success: "I would say overall benefits are that the child gains the seating, the correct access, and the correct device to increase their ability to communicate in the natural environment. You must have all three. You can't just have one."

One SLP (n=1, 5%) mentioned that one benefit of IPP for complex communication users is the ability to utilize AAC in the future. Benefits for the professionals and universal goals for all AAC users were recognized by 3 participants (15%). Participants were also asked to identify the limitations of IPP with AAC users. Multiple professionals (n=7, 35%) identified "limited access to other professionals" as a major barrier. One SLP stated:

Seeing the other therapists once a week is the biggest barrier because our schedules are so crazy. I think that's a disadvantage. Whereas a classroom teacher, if I go into her classroom two or three times a week, she's there. So, I see her more, and those kids tend to make more progress on the goals that she and I can work together on, compared to the goals that the physical therapist and I are working together on, just because we're not together as often.

One PT identified staff shortages causing collaboration issues:

The staff is busy and in too many locations. There aren't enough people, specifically PTs. I think maybe the staff is busy and in too many locations. There aren't enough people, specifically PTs. I think maybe there aren't enough people who do what we do, so we tend to become stretched thin. There aren't enough people that do what we do, so we tend to become stretched thin.

Limited time was a common thread to IPP from the participants as well. Thirty percent of professionals agreed that time is very scarce, particularly in educational contexts. Three OTs recognized that "there are only so many hours in the day." One SLP reported that time is limited unless it is addressed in the context of a co-treatment session. Two professionals (10%) reported high caseloads being a drawback of IPP. Interestingly, the same number of participants reported that AAC equipment drawbacks are also negative factors when considering engaging in IPP. One SLP reported that AAC sizing and transportability can be feared by other professionals:

I get a lot of pushback. "I don't want it to break. I don't want it to break. I don't want it to break. Oh, it's so heavy. Does he have to carry it?" I'm very big on once a child gets their device from day one, they have to learn how to transition with it, go look for it, and take it out of their backpack for usage. I get a lot of "it's going to break in the gym. It's a lot of steps to get up to the gym. It's so clunky." So, in that sense, I do get pushback because I feel like everyone likes the idea of it. But then when it's time to do the work, everyone starts to think, "Oh, this is more work now."

One PT also agreed that sizing of AAC devices can be limiting with goal implementation for motor therapy tasks: "Sometimes my goals aren't as well integrated. So, when we are walking around the school, you can't take some of the bigger devices with you when you're going up and down stairs. Carrying too many things is not super safe."

Professionals have determined that the last barrier to IPP is differing opinions on the treatment plan and personality clashes among different specialties. While interpersonal conflicts emerged as a recurring theme among the interviewees, providing high-quality patient care continues to be the primary priority. Three professionals (15%) reported that generational gaps of professionals

can also play a factor in willingness to collaborate with others. Five participants (25%) identified “hesitancies to collaborate with others” as a limiting factor. One PT reported:

Professionals kind of get in their silos and then they work well on their own. But then they don't feel the need to collaborate because they do well at their job independently. Feeling overconfident and not being willing to listen to other people's input can be a barrier.

SLPs were also aware of other professionals' reluctance. One SLP reported that “Not everybody is a team player all the time. And as much as you want to collaborate and work with them, they don't really. They just want to stay in their lane and do what they're used to.”

**Table 2**

*Strengths and Limitations of IPP*

Response Theme	<i>N</i>	%
<b>Strengths</b>		
Knowledge growth for professionals involved	6	30
Future device usage	1	5
Advocating for AAC usage	3	15
Benefits for the clients	4	20
Benefits for the professionals	3	15
Universal goals in mind	3	15
<b>Limitations</b>		
Time	6	30
Limited access to other professionals	7	35
Caseloads	2	10
Lack of education and knowledge about AAC	4	20
Equipment drawbacks	2	10
Hesitancies to collaborate with others	5	25
Attitudes of professionals	2	10
Generational age gaps	3	15

**Table 3**

*Example Quotes for Strengths and Limitations of IPP Themes*

Response theme:	Example quotes
<b>Strengths of IPP</b>	
Knowledge growth	“We trialed an AAC with a child and it didn't end up working out well because he was having so many regulation issues, sensory processing difficulties, and there was medication management that was messing up his system. It

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	<p>was so great that it happened in the context of a co-treat because, in just speech therapy alone, he would not have been able to do anything with the device because they just don't have access to the same sensory equipment and knowledge that we do.”</p>
Future device usage	<p>“Collaboration is really important during the evaluation process to make sure that you get the best device for the client, especially considering he will have this device for five years.”</p>
Benefits for the clients	<p>“You see so much progress in the child. It may not be these leaps and bounds, but when you're working with children three to five, it's not always those leaps and bounds that matter. It's a lot of those baby steps.”</p>
Benefits for the professionals	<p>“If I can communicate with the student a lot better, I know if something hurts, if they don't like something if you need breaks, that type of thing. That's really helpful. Also knowing what the students are struggling with on other people's caseloads is helpful, so I know how to tailor my goals to get the best benefits.”</p>
Goals for the Client	<p>“Obviously, communication as a speech pathologist is our goal. But to get that, you also need to make sure everything else is working for the child because you don't want to pick something where their physical abilities don't allow it. “The goal that we all have, of why we even give them a device, is for them to be functional independent communicators.”</p>
Limitations of IPP	Example quotes
Time	<p>“So definitely time can be a big thing at my current school. The OTs and PTs are on a different type of contract than the speech pathologists, which means they have to work a different number of sessions than us.”</p>
Limited access to other professionals	<p>“I work for a very large telehealth company, and we are spread across the entire state. The OTs are in the same building and I'm in my basement. So, just not being able to communicate information when it comes in is difficult when you're not in a physical location with someone.”</p> <p>“When I worked in early intervention, the barrier is that you're on your own a lot. So, you had to purposefully seek out another therapist. You're</p>

Lack of education and knowledge	<p>not going to run into them in the hallway like I do now in the school system.”</p> <p>“As a PT I don’t have as much experience, so sometimes you're spending more time trying to get the device working how you want it to than actually doing your therapeutic interventions.”</p> <p>“We (OTs) are not as familiar with AAC devices. If I had my first AAC user without the context of being in a co-treat, I think I'd be kind of lost in supporting the child if they were struggling to find something that they were looking for, unless they were really, really proficient. So, I am kind of learning along with the child with how these things even work.”</p>
Attitudes of other professionals	<p>“Some people are more difficult to ask questions to, not because they're not nice people, it's just a difference in personality.”</p>
Generational age gaps	<p>“I feel that there's a generational gap. I feel that the up-and-coming therapists aren't always as open. I feel like I get the look of <i>you could have googled that and not bothered me</i>, whereas I come from a generation of ‘let’s go and talk to the person’. This is a generalization, but oftentimes, if someone’s been working for a long time, they use their experience as a lot of their knowledge base. They may be more hesitant to accept knowledge from a new person because they have worked in the field for 30 years. So sometimes, some older professionals that have been working for, like 20-30 years, are not as open to getting your input.”</p>

### **Research Question Two**

How much education regarding IPP have the professionals had?

Two main themes and eight sub-themes were created from the participants’ responses. Refer to Table 4 regarding IPE levels of all 20 participants and Table 5 for additional responses on IPE.

**Table 4**

#### *IPE Level Themes*

Amount of education received	<i>N</i>	%
No formal education provided		
No education received	5	25

Learning within the field	5	25
University courses	2	10
<hr/>		
Continuing education		
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Formal CEUs	4	20
Online courses/programs	4	20
Work sponsored events	2	10
National conferences/ASHA information	3	15
AAC manufacturer courses	2	10

Interestingly, most professionals have received no formal education on IPP. Five participants (n=5, 25%) stated that they had not received any education on IPE, and it was not mentioned in their university courses. A PT explained that collaboration is “just kind of assumed that you know it and know you have to do it. And I think generally most therapists are good at that. I think that's a strong suit for us because we're medically model trained”. Most PTs mentioned that their university courses did not mention anything about collaboration with AAC users, nor the role of the other professionals that might be involved. One SLP stated “I feel like I just indirectly learned, and I felt that if I did not become proactive and go talk to the therapist, then I'm not going to know anything about my kid.” Twenty percent of professionals (n=4) stated that they learned how to collaborate with others within the field itself. One SLP participant stated, “I had no CEU or anything like that, just advice and modeling from other SLPs and other professionals within the field.” One OT stated.

An awful lot of learning was on the job. A lot of it is personalities, it's getting along with the people you work with, figuring out what the strengths and weaknesses of each team member are, and who contributes most effectively to which areas.

A small percentage of participants (n=2, 10%) reported that they learned about the value of working with AAC users in their university courses. A physical therapist spoke about a session in her program designed to practice interprofessional teamwork. She said, “Our school did an interprofessional education day with all the other health programs, though not necessarily with AAC users.” We all collaborated and got a fake case study. We had to figure out the case together. Regarding official IPP training, four professionals stated that they have completed CEUs for AAC. “I think IPP is touched on in a lot of continuing ed courses that I've taken; how to collaborate [most of the time it's with physical therapy], but I think the element of IPP is touched on pretty routinely in continuing ed,” said one occupational therapist regarding the interaction between their field and PTs. One SLP provided her insight on CEU information as well:

There have been some CEUs regarding coaching versus consulting, which is a very different mindset that kind of ties into seeking out interprofessional collaboration. But I would say some of those kinds of consultative coaching things, as it relates to AAC, and the users have been helpful.

Ten percent of participants (n=2) explained that their work provides learning opportunities for therapists involving IPP. According to one SLP, workshops are regularly given because her facility wants to improve its interdisciplinary collaboration:

Our facility just had an hour-long meeting with one of our other locations that is very good at collaboration. They were just sharing how they got to be so good at it, sharing the struggles and the successes, and what individual disciplines do to put the client first and put everyone's egos away, and just focus on the client to really just create the best possible situation for that individual.

**Table 5***Example Quotes for IPE Level Themes*

Response theme:	Example quotes
Limited formal education	
No education provided	“No education was provided. When I started school-based therapy, I was taught how to be a school-based PT by an OT. So, I sort of learned as I went along. I didn't really have all that much knowledge.”
Learning within the field	“Not as much as I would like. Most of it's just based on experience.”
University Courses	“We didn't necessarily have a class in college, but I think it was always discussed that professional collaboration is very beneficial.”
Continuing education	
CEUs	“Some CEUs, mostly through work. They provide some CEUs every summer, and so those are usually classes that benefit all of us or talk about us working together
Online courses	“I joined a group called The Wired Collective, which is an international group of pediatric OTs and PTs, and there's been a lot of collaboration there.”  “I took an Assistive Technology Certificate program course because I was thinking about getting my ATP. So, when you take those courses, you learn a lot about assistive technology for PT and OT. So, because of that, I think I know a little bit more than your average SLP who's just getting started.”
AAC manufacturer courses	“I've also done a lot of training through PRC.”  “I've been to several of Gretchen Bright's meetings.”
Conferences/ASHA	“I'm a member of ASHA Special Interest Group (SIG) 12 and we're always trying to do more about interprofessional stuff.” “I try to go every year to <i>Power Up</i> , the annual IT conference that Missouri has.”

**Research Question Three**

What strategies have SLPs, PTs, and OTs used to overcome barriers to IPP?

Two main themes and seven sub-themes were created from participant responses. Refer to Table 6 for a breakdown of strategies stated by the professionals and Table 7 for additional quotes from the professionals.



**Table 6***Response Themes to Overcoming Barriers*

Response themes	<i>N</i>	%
<b>Building Relationships</b>		
Building relationships to establish comfort	2	10
Family relationships	2	10
<b>Communication</b>		
Communication with other disciplines	4	20
Alternatives to typical communication	7	35
<b>Specific Approaches to Improve IPP</b>		
Modeling	2	10
Co-treatment	2	10
Professional development changes	2	10

Many professionals identified building relationships as a successful way to overcome the limitations of IPP. According to two individuals (n=2, 10%), relationships can also contribute to comfort level building. The benefits of higher comfort levels among collaborators when working together were mentioned by one occupational therapist:

The speech therapist and I both worked at another job together, so I think she and I were kind of used to working together when we both moved to early intervention, and that definitely helped that we were already familiar with each other and understood each other's therapy styles, and what the other one was looking for. But it is a struggle when you don't know somebody when you don't have that relationship with someone.

Family relationships are also incredibly important when working with AAC users. One PT provided insight into how familial relationships impact her role with these users:

I think what I employed initially was curiosity. So, we come into a home curious instead of locked into our specific discipline. We need to be communicating with families, and asking for continued use of the device because a lot of our families are intimidated by technology. Low-tech and mid-tech might not be the right fit for their kid. Their kid might be cognitively so intact and just stuck, and so we need to give them the best and we can't be limited. So, there are limitations to family use and getting families on board.

Communication can solve many barriers that collaboration might present. One PT mentioned the importance of not only collaborating with the family but also with other staff members: "Even within our own company, contacting the other staff. Please contact the other staff in the home. Please talk to them about any gains, any regression, or issues with access that you're seeing. Opening ourselves up to being curious is huge." The significance of the comfort levels of the other team members was elucidated by one SLP.

With AAC users, I think my experience has been that people are scared that they're going to do them wrong. So, I do think that is the first point of call. People get very worried, and they don't know where to start. So, I do think that acknowledging that the only way we're going to break through the barriers is open communication and acknowledging that not everybody might either have the natural inclination or the desire to do what maybe I'm passionate about, but that I do need their assistance. And so, making them feel like they're part of a team is super important.

Many professionals have had to start thinking creatively to ensure they are maintaining the necessary collaboration with other professionals. One OT mentioned that texting has been a quick and effective way for her to engage with others about the client. Regarding her additional means of communication, an SLP offered the following statement: “Sometimes we will have a kid come in when it’s not their regular therapy time. If I have an OT available on Tuesday at 4, but the kid comes Monday at 10, we might have to have the kid come in an extra session or just adjust their schedule that way.”

Additionally, many professionals provided specific approaches that they use to improve collaborative practice in their workplace. Two interviewees (10%) mentioned that modeling AAC usage has been successful with IPP. One SLP described how she models the device as an example for classroom teachers:

I try to plan times that I can push in, where it's more of a fun lesson that I'm doing. They can see it in action and get some ideas on how they can use it. Some teachers have really learned a lot from that, which is why that's one of the things I try to do frequently. Everybody learns best through play, even adults, so that's why I try to make it fun for the adults, too.

Co-treatment was mentioned by 10% (n=2) of participants but has proven to be quite difficult due to time restraints and other external barriers. One SLP stated that she has found untraditional treatment time to be successful in improving collaboration with PTs and OTs. She explained:

I've done a lot of giving up my lunch to go into a session with the person and figure out physical dynamics. So, it could be as simple as just going in to figure out where to physically put the device but also just making sure the other therapists are aware of how to incorporate the device into their routines.

Lastly, the same percentage of individuals (10%) reported adjustments their workplace has made to professional development. "In the schools, we have professional development plans that we have to do.," said one SLP. "My administrators must now honor the fact that I need to make time for collaboration instead of forcing me to attend meetings that may not pertain to me."

**Table 7**

*Example Quotes for Strategy Themes*

Response theme	Example quotes
Building relationships to establish comfort	“Just developing a relationship with those therapists so that we're comfortable. We might text each other, email, or have phone conversations after work hours if we have to. So, I guess, you know, developing relationships with them. Just letting them know if they're new, or I'm new to a case that I want to collaborate... just reaching out and making sure that they know that.”
Building relationships with families	“I think just open communication with the therapist and with the families, too, because sometimes you can tell that families might be starting to get a little disengaged or that their priorities have shifted. Where in the beginning it really made sense for us to be together, but now the family wants to focus a lot more on the language and some of that other sensory self-care. Fine motor goals are not as important, or vice versa.”

Communication with other disciplines	“Just reaching out to outside people. Obviously, keeping confidentiality, but giving background information on the client and asking what they believe might be the best for that student.”
Alternatives to typical collaboration	<p>“I’ll try to check my other team members’ schedule to see if they maybe have a cancellation or if they have a gap in their schedule to come in and watch for a couple of minutes just to see if they have any comments or have any takes on what I’m doing and how I could implement some of their strategies.”</p> <p>“Multiple methods of communication. So, even if I don’t see them and I have a question, I can maybe email them or shoot them a text message or leave a sticky note on their desk.”</p> <p>“Not just sticking with one mode of communication or saying, “Oh, well, they weren’t here today, I guess I’ll have to wait.” We all have a phone on us, so it’s sometimes easier to just shoot them a text message and say, “Hey, I have an idea for this. What do you think?” So that’s the biggest thing that I have come across, is just constant trials to stay in more communication.”</p> <p>“Sometimes I will work with the kids in their class, during the transition, moving from one place to another. Trying to get a really good schedule that I can follow, too, has helped. That is the hardest thing about working in the schools, is getting the schedule down and then trying to stick with it, because kids aren’t always where they say they will be, and teachers do things spontaneously.”</p>
Specific approaches used to improve IPP	“I’ve done a lot of training through PRC.”
Modeling	“Showing an example of how to use it (the device) and how to incorporate it. Like I have a kid whose device will be at his seat when he’s down on the carpet, and I’ll just grab the device and go bring it to him. His voice travels with him, just like every other kid.”
Professional Development Changes	“We use as many modalities for communication as we can. We started the end-of-session notes that we share so other professionals can look specifically at a certain area and don’t have to read through the whole thing. We have also started technology-specific how-to’s on our

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website so that the professionals don't have to ask us, they can just go there to look. We have also sent video links."

#### **Research Question Four**

What do the SLPs, PTs, and OTs feel would be most beneficial to the implementation of interprofessional collaboration in their current position and setting?

Six themes were created from the interviewees' responses. Refer to Table 8 for a breakdown of themes and Table 9 for additional quotations regarding the research question.

**Table 8**

#### *Themes to Improve IPP*

Strategies to Improve IPP	<i>n</i>	%
More time is needed	4	20
Co-treatment availabilities	7	35
More information on IPP	3	15
Professional/personal Changes	4	20
Caseload changes	2	10

A vast number of the participants stated that co-treatment should be more readily available to improve IPP with AAC users. Seven (n=7, 35%) of the professionals provided their rationales for co-treatment with PTs, OTs, and SLPs. One SLP stated:

I feel like I'm a broken record, but I think the most beneficial part of collaborating in the preschool setting is pushing in therapy. So, if the SLP, PT, and OT are all in the classroom together, working with one or two students, the teachers are also in there. We're all seeing what works best for the student. We're all maybe even using some of the same materials. Maybe we can pull something off the shelf in the teacher's room that's always going to be there so that we don't have to drag in every time we go.

To reduce communication problems, one SLP described how she would prefer to co-treat alongside PTs and OTs:

The most beneficial where I work would be more co-treating. So, we typically can bring them in for like consults, but as far as doing an actual therapy session with an OT, that's pretty limited. We can occasionally do that, but I would love to co-treat those kids, specifically the ones who have more physical limitations or are more scanning or eye-gaze. It would be a lot more helpful to have them during our treatment sessions with us the entire session.

Four out of twenty participants (20%) stated that they felt increasing time across all contexts would be the most successful way to increase collaboration with AAC users. One OT explained:

I think it would be so helpful if we had time set aside to do rounds on the kids that we overlap with, even if it's not ones that we're directly treating. I think that it would be better practice for us to be really up-to-date without having to weed through tons of records and treatment notes. I think it would be better for the families to know that their care team is on the same page. There's a lot of that subtle change in outpatient that isn't easily captured through documentation. So, I just think if we could have some way of doing ongoing touch bases, that would be the biggest thing to encourage more constructive collaboration.

Additional information on IPP was mentioned by 15% (n=3) of the participants during interviews. One SLP stated that she wishes ASHA would provide more resources to improve IPP. She stated:

I wish that ASHA would provide more resources for SLPs in the schools on collaborating with other professionals and the importance of it. Even if it's training or a research study that was done to show the positives of it, or what works and what doesn't, I feel like a lot of

people don't realize how big collaboration can be, especially with AAC. I feel like if we had somebody who was considered a higher-up to enforce collaboration, it would be a lot more beneficial for everyone that's involved.

More can be done to enhance collaboration through strategies than by outward modifications. A total of 20% (n=4) of participants stated that personal and professional changes should be the first area to modify. One SLP provided the following response:

First and foremost, I would start with expectations. We have this expectation of contact notes. So anytime you speak with a parent about anything, you need to share that note with the whole team. I find that a lot of people don't do that. So, I think it's the expectations of what's required to establish appropriate interpersonal communication and collaboration. But then it's also the follow-through.

**Table 9**

*Example Quotes for Improvement of IPP*

Response theme	Example quote
More time	“I think the most important thing would be if they could just give us time. Teachers have so much more time to collaborate. They have a little set time where they all have a meeting. But there's really no time for me to meet.”
Co-treatment availability	<p>“We have this current requirement that clinicians collaborate monthly with one another. We have monthly staffing meetings requiring that staff collaborate. So, it is a requirement for collaboration, that they push in and co-treat, and have open communication with mentors.”</p> <p>“A time that was set aside for us to talk it out and just make sure that our co-treatment time can be spent working collaboratively. In an ideal world, if you could ideally set aside that time, that would be the most helpful.”</p>
More education on IPP	“I think maybe more in-services or education would be good. My current position doesn't include a lot of other professionals, it just has PT and OT, but I think having PT present to OT and vice versa would be beneficial.”
Professional/personal changes	“I think it's probably getting the administration buy-in. I think if we learned how to navigate to the correct people so that they will give us the time and investment that we need to support the OTs and the PTs and educate them, it would be great. Most beneficial in my setting would be to not have such strong insurance mandates on what we can and cannot do, which is why some people go private pay. But when you go private pay, you lose such a huge population that actually needs your services, but they can never afford it. So, by accepting insurance, you can help the masses. But

in doing that, you're stuck with some pretty strong mandates that limit your services.”

Caseload changes

“Better overlapping caseloads. I collaborate with three or four other OTs and speech therapists, so you're not collaborating with the same professional each time. You can't just sit down and have a monthly meeting and go over all your students together, so it is really spread out and sporadic when you're able to talk to people.”

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## Discussion

The results of this study supported IPP as an essential tool when treating AAC users, regardless of the amount of education obtained. Professionals engaging in IPP have a positive effect on patients with complex communication needs and it should continue to be implemented more frequently to establish the best possible results for our AAC users. Responses from this study are consistent with the idea that there are both advantages and difficulties with implementing IPP. When communicating with professionals regarding the strengths of IPP, 15% of responses pertained to overall professional knowledge growth. Interprofessional models, in the opinion of Bridges et al. (2011), who examined the curricula of three institutions' IPP programs, allow students to gain a deeper understanding of not only their profession but also the roles and duties that other professionals play in the team. Through instruction, one can learn more about these specialties and develop their clinical abilities to better assist their clients.

Additionally, the participants in this study mentioned many barriers to collaborative practice. When discussing a limitation of IPP, one SLP mentioned that she works remotely for a telehealth company. As a result, she does not have quick access to the OT or other experts when she needs to share information instantly. Researchers began to focus more on telehealth challenges because of the COVID-19 pandemic's increased need for virtual healthcare. According to Breton et al., telehealth-based interprofessional collaboration can impede difficult case discussions, diminish team building, and create feelings of isolation (2021). In this qualitative research study, one physician provided his perspective on the influence of telehealth on team development. He expressed the opinion that, although a multidisciplinary team approach was employed in the recent past, the traditional model of treatment provided by a single physician had returned (Breton et al., 2021).

It is also important to bridge the gap between parents and their children's AAC devices. According to an SLP who participated in this study, one advantage of IPP is that it helps advocate for AAC, though it can also be a barrier if not utilized appropriately. Due to myths and potential limited exposure to AAC, this step can be frightening for many caregivers. In a study completed in 2022, researchers aimed to discover parents' perceptions and experiences with alternative communication methods by interviewing hundreds of parents whose child uses an AAC device. Many parents acknowledged that the largest obstacle affecting the use of AAC appeared to be a lack of support for the technology. Parents expressed their desire for other professionals to be informed of and an active participant in the AAC process (Berenguer et al., 2022). Therefore, SLPs should offer more comprehensive training to other team members who may not be as familiar with AAC. Additionally, when all therapists participating in a patient's care plan communicate clearly with one another, the likelihood of miscommunication between them can be reduced. The combination of speech, physical, and occupational therapies that many complex children need, means that a significant amount of time must be dedicated to treatment and at-home activities. To reduce schedule demands, therapists could collaborate to combine goals using a multidisciplinary approach (Berenguer et al., 2022).

The respondents in this study offered their chances to progress in the field of collaborative practice, in line with the abundance of research on the advantages and requirements of IPE. Twenty percent of therapists mentioned that they have independently sought out CEUs regarding IPP. One SLP described a CEU that she has taken, regarding 'coaching vs consulting' and how it relates to the partnership of therapists. Team coaching versus consulting models are related services that both tie into IPP. As stated by Hackman & Wageman (2005), direct communication with a team and the goal of completing the task are integral to coaching. Coaching focuses on the instructor specifically,



whereas the goal of consulting is the collective team. Consultation involves a multifaceted approach with preparation and skill development within each discipline (Arredondo et al., 2004). Additionally, these services can be used to bring users of AAC together and ensure consistent implementation in all environments.

Results from this study should be considered with caution due to the limitations presented. One of the study's disadvantages is that most participants were licensed speech-language pathologists. Therefore, the results of this study may not be as applicable to physical and occupational therapists. The usefulness of IPP with adult AAC users in medical settings is limited since most practitioners have only assessed and treated pediatric AAC users in educational environments. Additional limitations include a restricted number of prior studies on the topic of IPP with AAC users, a smaller sample size than expected, and inconsistent numbers of users each professional has served. In addition, IPP in hospitals or similar settings is the basis for most of the research. Participants were asked to respond based on the setting in which they work, although some were potentially working in multiple settings simultaneously, or had previous experiences that could influence results. The study was also conducted during the COVID-19 pandemic, which affected the responses due to fewer opportunities to foster interprofessional collaboration, and working together took place remotely. Additionally, it would be effective for a cross-sectional study to be evaluated, by observing the progress of AAC users when treated primarily in a collaborative manner, as opposed to receiving minimal collaboration with other relevant professionals. It is suggested that a larger number of participants with diverse experiences be utilized to further represent the IPP with the AAC population with greater accuracy. It would also be beneficial for further research to compare IPP with AAC users across different work environments to determine if collaborative care creates a positive change when used in treatment.

### Conclusions

The purpose of this study was to identify the strengths and challenges of IPP, educational levels regarding collaborative care, strategies the professionals have found to overcome limitations for IPP with AAC users, and suggestions for change. A semi-structured Zoom interview was conducted with each professional to determine their impression of IPP with users with complex communication needs. The current study provided more support in the literature of previous studies regarding the IPP of PTs, OTs, and SLPs with AAC users. This can be attributed to the noteworthy benefits of IPP that were mentioned in the interviews. All the participants stated that although they recognize the value of collaboration for these users and believe it should occur more regularly, staffing, time, and personal limitations can make it difficult. The amount of education regarding IPP did not impact any participants' views on the necessity of collaborative care, but all participants believe that it is important in their current and previous work experiences and academic environments. All participants provided suggestions to implement change in their current workplace to allow for easier collaboration with other professionals.

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## Appendix A

### Interview Questions

1. How many individuals on your caseload are AAC users?
2. Are these individuals typically pediatric or adult users? In what setting do you typically work with these users?
3. How many minutes per week do you provide direct treatment to your AAC users?
4. In what capacities do you collaborate with other professionals regarding delivering services to AAC users? Goal writing, assessment, treatment, etc.?
5. How comfortable are you communicating with AAC users? Do you feel that this has changed with more experience?
6. How comfortable are you collaborating with other disciplines?
7. How did you become involved with working collaboratively with other disciplines?
8. How often are you in contact with the other professionals?
9. What are the benefits of interprofessional collaboration for AAC users? ‘
10. What are the barriers to implementing interprofessional collaboration for AAC users? Time.
11. What strategies have you used to overcome these barriers? Something to help them
12. Have you received any education related to interprofessional collaboration? (CEUs, university courses, etc.)
13. Do you feel that you have received enough education regarding interprofessional collaboration?
14. What do you feel would be most beneficial to the implementation of interprofessional collaboration in your current position and setting?

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**Research**

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<i>Kaelyn N. Spowart, MA, CCC-SLP</i> <i>Misty Tilmon, EdD, CCC-SLP</i>	
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