



The Critical Need for Knowledge and Usage of AT and AAC Among Speech-Language Pathologists

Survey White Paper

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Introduction

In late 2011, the Assistive Technology Industry Association (ATIA) conducted a survey of speech-language pathologists (SLPs) to gauge attitudes about and usage of assistive technology (AT) and its communication subset, known as “augmentative and alternative communication” (AAC) within the SLP profession. Ultimately, the findings of the study – presented herein – are meant to contribute to dialogues occurring within the SLP profession concerning the use of technology in treatment. The stakeholders involved in implementing this study understand that the SLP profession has an overall goal of helping SLPs achieve competency in treatment that uses all appropriate tools, including technology, in the treatment of speech and language disorders. The study is based on “Aided” AAC, where a commercially available device or other technology aids the client in communicating. This is in contrast to “Unaided” AAC, which is exemplified by American Sign Language (ASL). The ATIA’s hope and expectation is that the findings from this study will be helpful to the SLP profession in assessing its use of AT and AAC in treatment and plotting a strategy for improving the various related competencies within the profession.

The issue of AT and AAC competency in SLP practice has relevance today. Research conducted ten years ago by the American Speech-Language Hearing Association (ASHA) found that identification of AT and AAC specialists was not a pressing problem at the time. Most consumers and family members found the small number of available AT and AAC specialists via informal networks (i.e., “word of mouth”). More recently, however, ASHA’s updated “Scope of Practice in Speech-Language Pathology” makes AT and AAC know-how the responsibility of all SLPs. Technological change has also made it easier for SLPs to access information from experts (via webcasts, online courses, blogs, etc.) As a result, according to ASHA subject matter experts, it appears that significantly more SLPs are involved in AT and AAC delivery. However, as the findings of this current survey will reveal, all of this evolution in training, practice and awareness has not necessarily resulted in the level of competency that the profession requires.

Survey Methodology

The ATIA surveyed 549 speech-language pathologists (SLPs) in the United States. The respondents were drawn from the membership of two American Speech-Language-Hearing Association (ASHA) special interest groups (SIGs): One whose mission addresses AT and AAC and the other, School-Based Issues. Respondents represent a range of practice settings, area of focus/expertise, and length of time in practice.

Data was collected through a quantitative survey via the Internet in October, 2011. In addition, several in-depth interviews were conducted with SLP stakeholders who are familiar with the issues involved in implementing AT and AAC in the therapeutic context. Their comments inform some of the analysis contained herein. Respondents received no incentives – neither monetary nor in-kind – in exchange for their participation. Two caveats must be noted: 1) Participation in survey was self-selected (random sampling was not employed). 2) Participants were aware that ASHA special interest groups had referred them for participation.

NOTE - In this paper, we categorize SLPs by client age group using the following terms: “SLPs/Child”, “SLPs/Adult” and “SLPs/Mixed” (See Figure 2.)

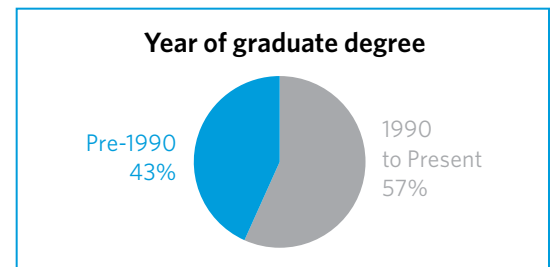


Figure 1 – Year of graduate degree

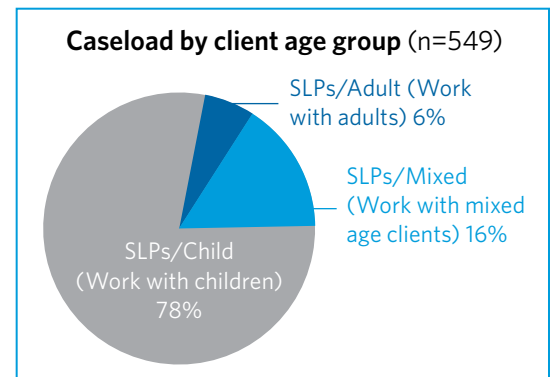


Figure 1 – Year of graduate degree

Executive Summary

The majority of SLPs surveyed admit lacking knowledge, direct experience, and competency in Assistive Technology and Augmentative and Alternative Communication. Basic confusion also exists among some SLPs regarding the nature and uses of AT and AAC, and what role they play in the context of language and literacy, and treatment regimens. And, there is a perception among SLPs surveyed that many of their professional peers who provide AT and AAC services are unqualified to do so. At the same time, there is a sense that AT and AAC are an interesting and worthwhile field of knowledge that many SLPs hope to expand in their practices.

Highlights of the survey results include the following:

- SLPs are interested in AT and AAC: 86% of respondents would like to know more about the range of AT and AAC devices and services that can help the learning and communications competencies of clients in their caseloads.
- Attitudes about AT and AAC are not uniform. Some SLPs are excited about AT and AAC and see it as an opportunity for their practices, while others lack interest, not perceiving it to be relevant.
- There are not enough AT and AAC-competent SLPs: Only 10% of respondents believe that there are sufficient ranks of SLPs with AT and AAC knowledge to meet the needs of consumers.
- SLPs do not receive adequate education in AT and AAC: 74% of respondents feel that they lack adequate preparation in AT and AAC in school.
- 78% of respondents feel that they had inadequate preparation in AT, excluding AAC, in their undergraduate and/or graduate programs.
- SLPs point out a lack of consistency in SLP delivery of AT and AAC services: More than a third of respondents feel that their SLP colleagues who employ AT and AAC intervention strategies and technology are not knowledgeable in AT and AAC.
- SLPs desire more knowledge about AT and AAC, especially in the realm of new technologies such as tablet computers. More than 90% of respondents want more information about tablets, and their potential role in AT and AAC treatment.
- In terms of remediating AT and AAC knowledge gaps in the profession, SLPs favor a mix of pre-service curriculum modifications, more continuing education opportunities, and increased mentorship.

Detailed Findings

The survey results reveal a pronounced belief amongst SLPs that knowledge within the profession is deficient with regard to AT and AAC. Beneath this clear finding, however, many nuances and differences of opinion pervade. This is to be expected in such a large and diverse profession. Complicating the picture are pragmatic factors such as diverse needs of the various client age groups served, funding, and - in the school setting - specialized service roles, some of which preclude direct involvement in AT and AAC treatment by SLPs.

A Worthwhile Skill, but a Lack of Knowledge of AT and AAC among SLPs

The survey shows a belief that AT and AAC are worthwhile skills for an SLP as evidenced by 86% of respondents stating they would like to know more about the range of devices and services that can help the learning and communications competencies of clients in their caseloads. On the topic of Autistic Spectrum Disorders (ASD), 76% of SLPs/Child feel that AT and AAC are priorities for them given that it can meet the needs of students with ASD.

Despite the clear opinion that AT and AAC are important and relevant to SLP practice, the survey shows strong consensus that the profession is deficient in its ability to provide for the AT and AAC needs of its clientele. As Figure 3 shows, only 9% of SLPs/Adult and 12% of SLPs/Child think that there are enough AT and AAC-competent SLPs working today.

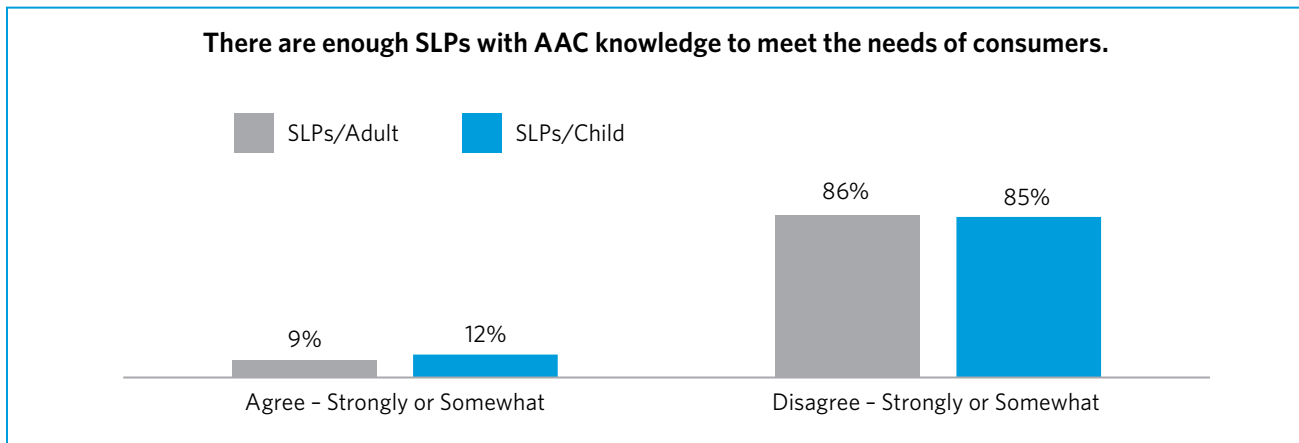


Figure 3 - Q5. "There are enough SLPs with AT and AAC knowledge to meet the needs of consumers." - According to caseload by age.

When SLPs talk about their own preparation to offer AT and AAC technology and interventions, they reflect a similar lack of confidence. As Figures 4 and 5 show, three quarters of SLPs do not think they had adequate preparation in AT and AAC in their undergraduate or graduate program. SLPs who earned their graduate degrees before 1990 feel as if they received less preparation in AT and AAC than their colleagues who graduated more recently. Furthermore, while 3 out of 4 respondents state that they are familiar with the IDEA 2004 definition of assistive devices and services, only 21% felt that they were adequately prepared in AT and AAC by their pre-service training.

AT and AAC training is potentially part of the “Communication Modalities” part of the SLP curriculum, which is required for ASHA certification. However, AT and AAC are not mandatory. An SLP can attain ASHA Certification by taking a course in other “Communication Modalities” such as sign language. In that case, the SLP would graduate and receive ASHA certification without taking any coursework on AT and AAC.

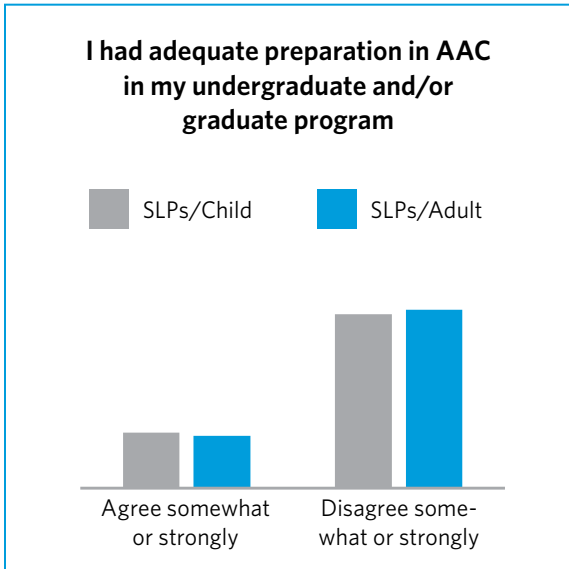


Figure 4 - “I had adequate preparation in AAC in my undergraduate and/or graduate program.” - According to caseload by age.

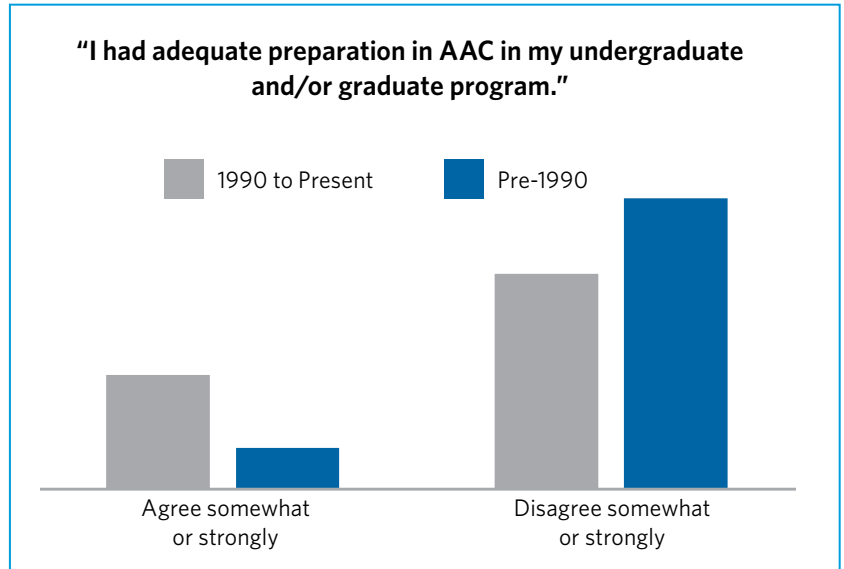


Figure 5 - “I had adequate preparation in AAC in my undergraduate and/or graduate program.” - By year of graduate degree.

This research also sheds light on a crisis of confidence that SLPs have regarding their colleagues who implement AT and AAC. More than a third of respondents disagree with the statement, “SLPs who include AT and AAC in their practices are very knowledgeable about AT and AAC intervention strategies, including but not limited to AT and AAC technologies.”

Going beneath the surface, however, it becomes apparent that SLPs do not share a common definition of AT and AAC or a uniform sense of where it fits into the broader context of treating language and literacy deficits. Evidently, AT and AAC are many things to many people. On one level, this confusion is understandable considering the multiple diagnoses, client age groups, practice settings, and technologies that exist. And, differences in training explain some of the confusion. Given that 74% of respondents do not agree with the statement that they received adequate AT and AAC training in school, it follows that they would not necessarily all share the same definition of AT and AAC.

Dissonance regarding the definition of AT and AAC falls into four broad categories:

- **It's all about the technology** – Some respondents have a very narrow perception of what AT and AAC are, which includes only the use of technological services and devices to augment communication. For these SLPs, knowing which communication tools, including devices to use and how to use them summarizes the use of AT and AAC.

"I have seen several SLPs who focus on AT and AAC who tend to automatically use the highest tech device possible, even before attempting low tech or for kids who do not have a consistent yes/no response at all."

"I think that AT and AAC knowledge is contingent on the practical use of the device in the setting that you work in."

- **It's a treatment process which may (or may not) utilize technology** – Some respondents feel that AT and AAC are simply single parts of a broader language and literacy treatment process.

"[There is an] incorrect perspective by practicing SLPs that they 'don't do' AT and AAC. Everyone does AT and AAC. It is just a communication support that should be part of all speech and language treatment."

"In most cases, AT and AAC are part of every single thing I do as an SLP, even with kids that people don't think of as AT and AAC users. I think it is time that AT and AAC and traditional SLP camps be less divided."

- **Aren't AT and AT and AAC the same?** – Some respondents fail to distinguish between AT (which involves a vast array of technologies/devices to help any type of disabled person function) and AT and AAC (which is more narrowly targeted at helping people with communication disorders to communicate). These types of respondents tend to use the acronyms interchangeably.

*"My district has an **AT and AAC team** to access and determine best **AT**." (emphasis added)*

- **It's over my head** – Many respondents express a belief that they are so out of date that they effectively don't understand the topic of AT and AAC, or perhaps never did. This may or may not be the case in reality, but it is a sentiment that informs respondents' point of view.

"The technology changes so fast, you need to update a few times a year!!!"

"I had excellent training in AT and AAC in the early 1980s, but I have not kept up with the latest technology as my caseload doesn't warrant it."

"I require training for each new kind of device I use."

A recurring sentiment revolves around a sense that SLPs who use AT and AAC tend to be overly reliant on a specific technology or device. One school-based SLP stated, "As a lead SLP for our [school] district, I find that SLPs tend to become familiar with one way of providing AT and AAC. Out of 13 employees, I have 4 that regularly provide AT and AAC to students, but each one has their own idea of what's best, and are all very different."

This reflects a gap in understanding about where AT and AAC fits into the overall treatment protocol. According to subject matter experts, an AT and AAC intervention should fit the client's individual level of language proficiency. For example, if a child does not yet have a firm understanding of language itself (i.e. "Yes" means "I want something" and "No" means "I don't want something") then an augmentative communication technology, such as a speech generating device, will have limited therapeutic value.

Some SLPs do not believe that their professional peers are completely aware of whom AT and AAC technology can serve and how - including those who specialize in AT and AAC. One respondent noted, "It seems that SLPs take the same approach to AT and AAC no matter the diagnosis - Autism Spectrum Disorder (ASD) teaching of AT and AAC are very different from CP and even different than dyspraxia." Another revealing comment: "I am currently working with a 3rd grader who is unintelligible. The student is of average ability and is able to express ideas, just not so he can be understood... every SLP I know that has experience with AT and AAC has no idea what to do for a student at this boy's level."

Obstacles to Providing More Clients with AT and AAC support

There exist a host of obstacles to the goal of providing more clients with AT and AAC support. Many factors are to blame for the current situation, though the survey results highlights deficiencies in pre-service education, a lack of mentoring, little access to continuing education opportunities, overwhelming caseloads, and funding problems.

Lack of Courses

On education, the respondents describe several interlocking problems with AT and AAC training. On a basic level, there is simply not enough time in the curriculum for dedicated AT and AAC courses. Figure 7 shows the top 4 barriers to better preparation in AT and AAC. The issue of "no time in the program" is the most serious barrier identified. Furthermore, respondents share that attention devoted to AT and AAC at the graduate level is minimal, and that AT and AAC coursework is often elective-only. Not surprisingly, only 21% of respondents feel that they were adequately prepared in AT by their pre-service training.

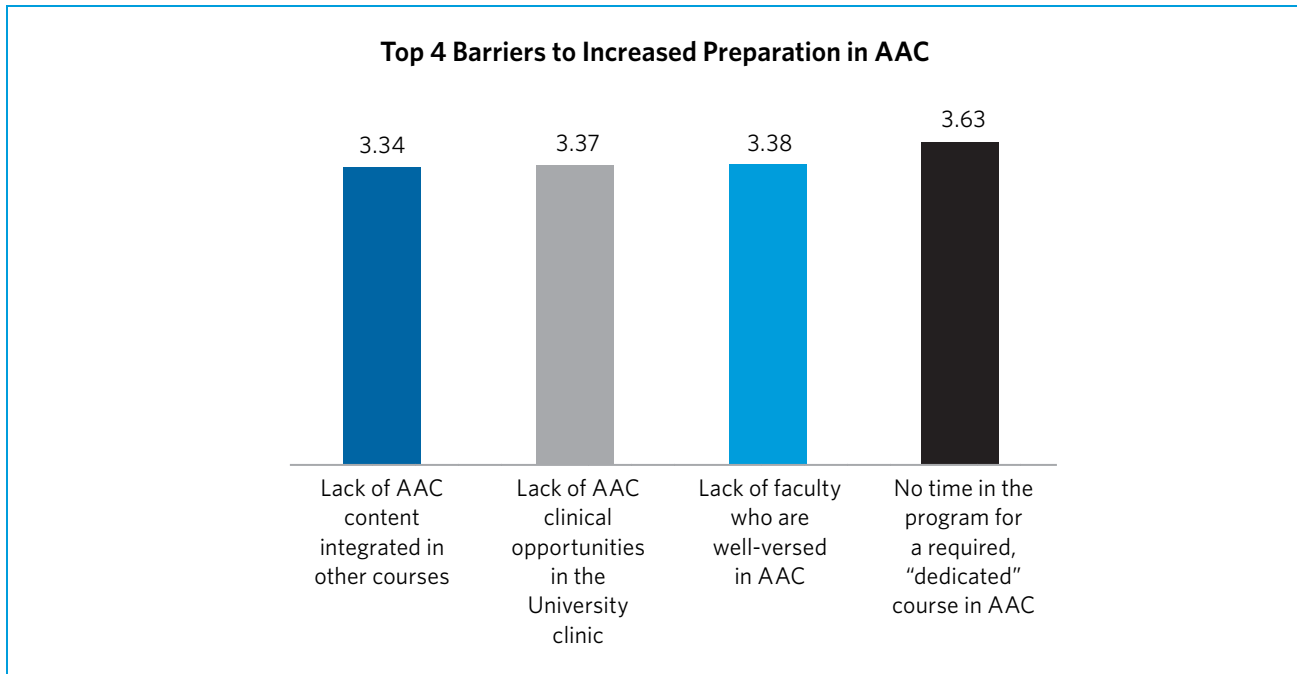


Figure 6 - Q9 - Top four ranked barriers to better preparation in AT and AAC (mean scores).

The lack of coursework is only one aspect of the problem, however. As Figure 6 shows, a lack of AT and AAC content integrated into other courses, a shortage of faculty who are well versed in AT and AAC, and few clinical opportunities in AT and AAC are also considerable barriers. Hence, the status of AT and AAC training in SLP education emerges as one that is a secondary need, one where faculty themselves may not have the background to teach it effectively. The desire for integration of AT and AAC into other coursework hints that SLPs want to understand AT and AAC options and perspectives in a broader treatment context.

Figure 7 displays obstacles to greater AT and AAC that were identified by asking, "What are the most important factors in pre-service education that would result in more graduating students practicing AT and AAC effectively?" Two factors emerge as significant:

- More required courses - 67% of SLPs/Child and 78% of SLPs/Adult ranked this as important.
- Mentoring by experienced AT and AAC professionals - 73% of SLPs/Child and 63% of SLPs/Adult ranked this as important.

“What are the most important factors in pre-service education that would result in more graduating students practicing AAC effectively? (Sum of 1st, 2nd or 3rd rank)”

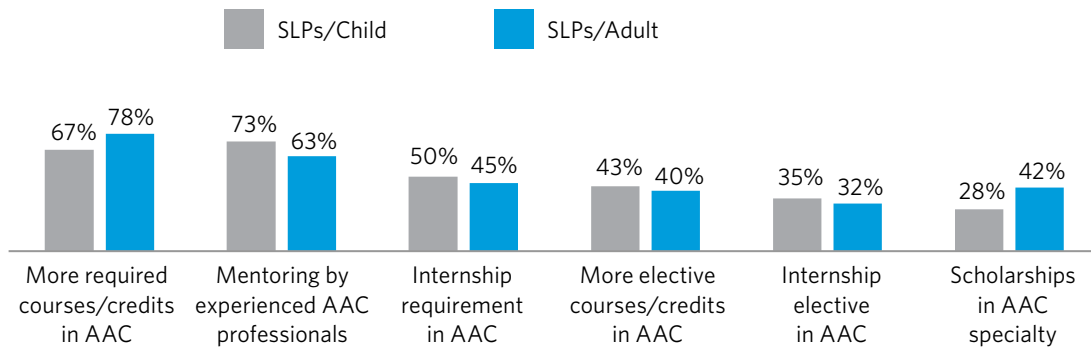


Figure 7 - Q7 - What are the most important factors in pre-service education that would result in more graduating students practicing AT and AAC effectively? (Sum of 1st, 2nd or 3rd rank)

Mentoring

Interest in mentoring as a solution for improving AT and AAC knowledge demonstrates that a lack of mentoring is a factor inhibiting knowledge today. SLPs/Adult view mentoring by experienced AT and AAC professionals as the single most important way to become proficient in AT and AAC technologies and interventions; whereas SLPs/Child consider on-the-job continuing education to be just about as important as mentoring in achieving AT and AAC competence. SLPs/Mixed (who treat clients age birth to over 65 years of age) have a much greater interest in becoming mentors (76%) than those who treat only children (43%). This greater interest from SLPs/Mixed may be due to a comfort level that they have achieved from providing a greater range of services. SLPs/Child are much more interested in being mentored (80%) than SLPs/Adult (50%). Regardless of their treatment population, those SLPs/Adult who received their master’s degree after 1990 are also very interested in being mentored (81%). (Note, however, that Question 10, which asked respondents if they want to be mentored and wanted to be a mentor does not specifically refer to mentoring in AT and AAC.)

Importance of Pre-Service vs. In-Service Mentorship on Developing AAC Knowledge and Skills

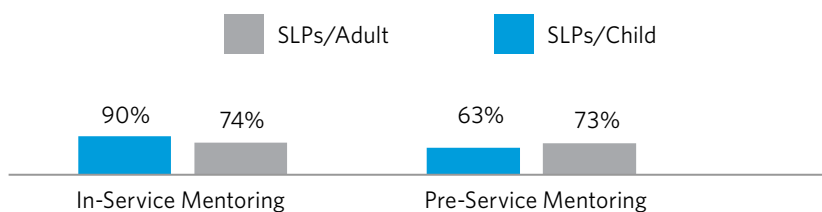


Figure 8 - Importance of Pre-Service vs. In-Service Mentorship on Developing AT and AAC Knowledge and Skills - According to caseload by age.

Figure 8 compare views on mentoring across the Adult and SLPs/Child. SLPs/Child seem to be more interested in mentoring as a pre-service opportunity while SLPs/Adult seem to favor mentoring while in practice. This makes sense given that many SLPs/Child move directly from degree programs to school settings where they are plunged into AT and AAC treatment issues right away and may feel the need for earlier mentoring on the topic more urgently.

Workload

Some respondents, particularly school-based SLPs, cite a lack of time in their schedules to become more versed in AT and AAC.

“Do not put more on us. We barely function in the school setting when we have 70-75 students on a caseload.”

Experts affirm that lack of time and heavy workloads prevent many SLPs from learning more about AT and AAC.

An interesting finding is that there is a perceived low frequency of actual need for AT and AAC, and this fact also makes learning AT and AAC less of a priority for some SLPs. It is perhaps unrealistic to expect SLPs to have competency in conducting AT and AAC evaluations or have familiarity with a range of devices “given all of their other professional responsibilities.” Experts concur that a diversity of opinion exists about the actual need for AT and AAC. While some of the respondents echoed the sentiment that only a small percentage of clients need AT and AAC, research done by ASHA found that SLPs believe that more than half of their clientele could benefit from some form of AT and AAC. This split hints at a self-perpetuating cycle, where AT and AAC-challenged SLPs are reluctant to provide the service and their colleagues are unlikely to refer to AT and AAC specialists in whom they lack confidence. As a result, AT and AAC are only pursued in a small selection of cases.

Little Access to Continuing Education

Asked “What factors would increase the availability of SLPs with AT and AAC skills?”, respondents in aggregate and SLPs/Adult as a sub-group rank “More opportunities in continuing education in AT and AAC” as number one. But SLPs/Child contend that the best way to enlarge the field of AT and AAC-skilled SLPs is to clearly demonstrate that AT and AAC are evidence-based practices. Both Adult (67%) and SLPs/Child (52%) agree that added AT and AAC pre-service requirements would also lead to a swelling of the ranks of SLPs/Adult who are practicing AT and AAC. And SLPs/Child feel that more knowledge about AT and AAC products would drive a proliferation of AT and AAC-skilled SLPs, as well.

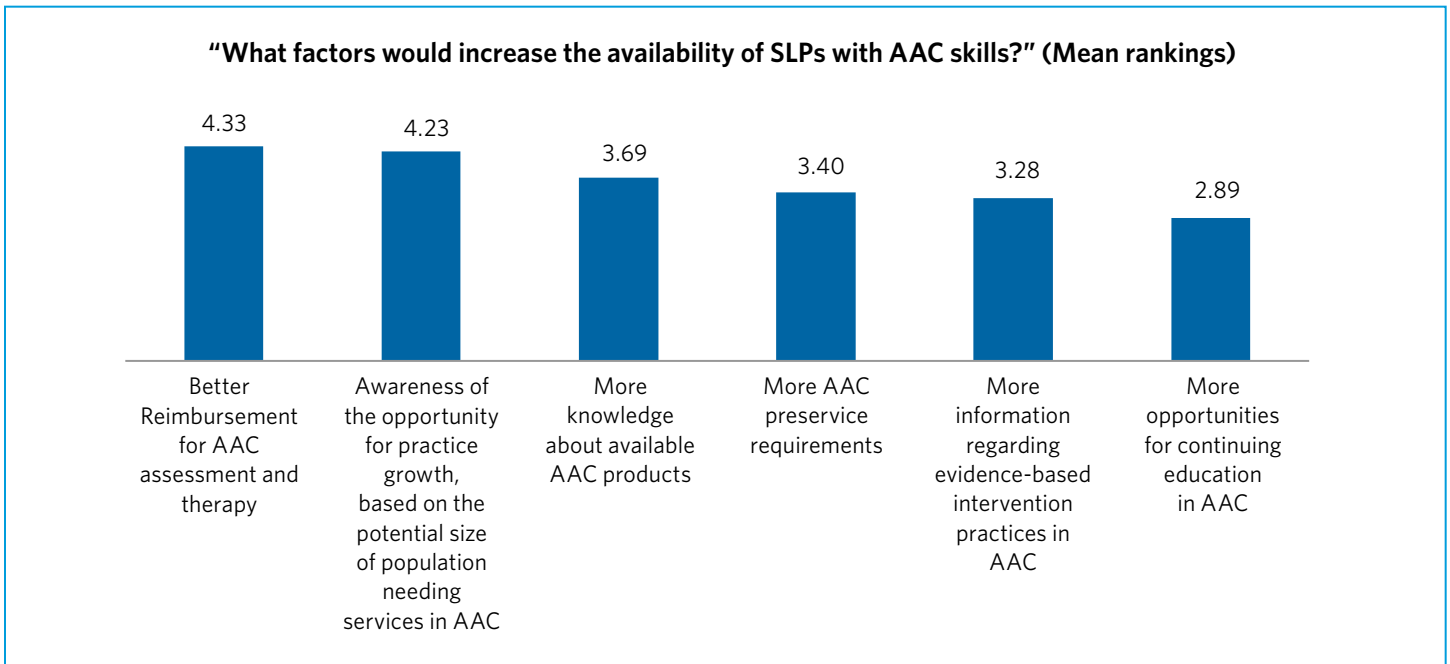


Figure 9 – Q6 – What factors would increase the availability of SLPs with AT and AAC skills? (Mean rankings)

Funding Issues

There exists a hefty set of impediments to accessing the opportunities for continuing education.

“[We need] more affordable continuing education opportunities/reimbursement - unfortunately a lot of settings that use/implement AT and AAC do not have the budgets to educate staff/send them to workshops or pay to bring people in, and SLPs seem less willing to spend their own money during these ‘fiscally conscious times.’”

The issue of better reimbursement for AT and AAC assessment and therapy was ranked rather low as a driving factor that would increase the availability of SLPs with AT and AAC skills. But open-ended comments by respondents and discussions with experts in the field indicate that funding is in fact a major obstacle to getting more SLPs working with AT and AAC. SLPs are concerned that equipment is not always covered by insurance and that related services are not consistently covered either.

“I work with a significant number of students with autism and have found AT to be one of the most important aspects of treatment... the challenge has been obtaining funds for technology via insurance reimbursement as well as having the time and talent to program the high tech devices and create low tech systems.”

“High tech devices are so expensive and it is becoming more and more difficult to obtain approval for devices through private insurance companies. I am finding that even when approval is given families have a difficult time paying their co-payment portion.”

Service Delivery Issues

Many school-based SLPs view the AT and AAC knowledge question from an institutional distance. While SLPs may have clients on their caseloads who are in need of AT and AAC, depending upon the organization structure of the school, AT and AAC may be implemented by other professionals. Some school districts have AT and AAC

handled by departments other than Speech and Language, with little if any coordination with SLPs. Many smaller districts do not have that option in place. They may have never had it or it is currently unavailable due to budget cuts. In some cases, they may have previously used outside consultants or fee-for-service AT resources centers and so forth. Yet, school-based SLPs are invariably required to serve all students that come into their caseloads. The SLP is responsible for providing the best treatment options but is frequently unable to influence how AT and AAC will actually be delivered. The result is frustration and stress about how to best provide AT and AAC for clients who need it.

“It is impossible for the average SLP in the schools to stay knowledgeable about all AT and AAC technologies. An AT and AAC/AT specialist is needed to do that.”

“Our district does not use SLPs for AT and AAC evaluations or training.”

Challenges and Opportunities in Emerging Technologies

Technology presents both an opportunity and a challenge. SLPs mentioned technological advances with both positive and negative connotations. For some longer-practicing SLPs, technology is viewed as a frustrating obstacle. For example, “It is hard to keep up with all of it [AT and AAC technology] when you are working with the children and dealing with the day to day needs and requirements” and “Technology is changing so fast that the lessons I received in school no longer exist.”

At the same time, many respondents express a view that technology, especially new tablet computers, holds promise for making high quality AT and AAC available at relatively low cost. Tablets with AT and AAC software are apparently far less expensive than custom made AT and AAC technologies.

“If a tablet is comparable to the dedicated speech output device, they could be purchased for less than families would have to pay for a co-pay on dedicated devices.”

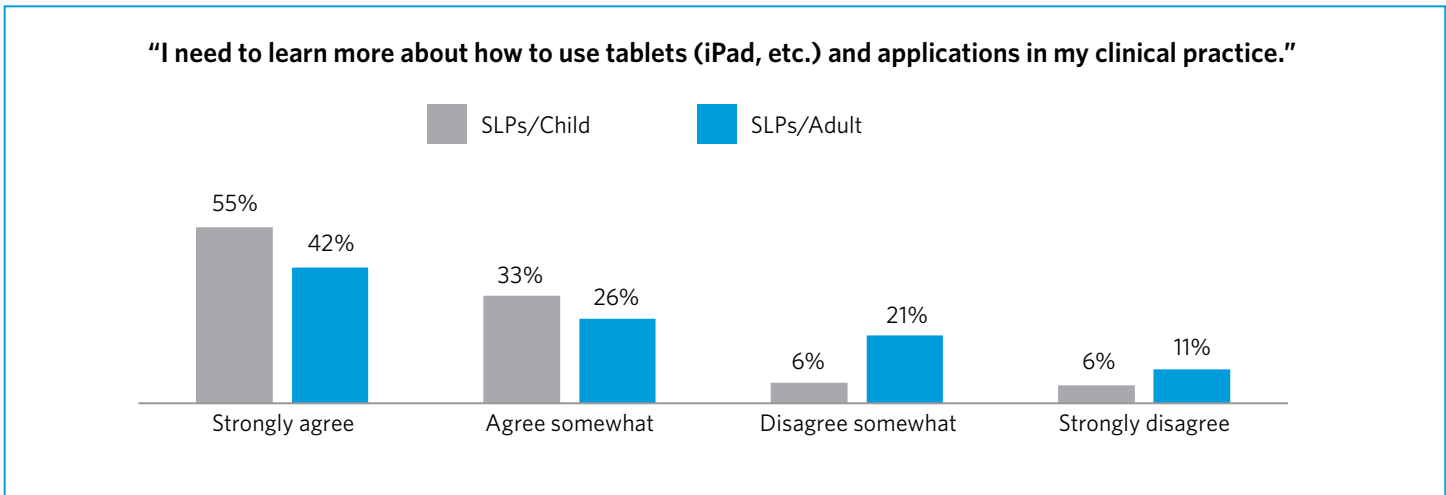


Figure 10 - Q13 - Level of agreement with “I need to learn more about how to use tablets (iPad, etc.) and apps in my clinical practice.” - According to caseload by age.

As Figure 10 demonstrates, 85% of respondents overall perceive that they need to learn more about how to use tablets and applications in their clinical practices, compared to only 65% of SLPs/Adult. This split suggests that tablets, which are easily acquired, easy to use, and comparatively inexpensive, are seen as a real boon to school age clients.

However, the same cautions about the over-reliance on technology discussed earlier should still be factored into the discussion about the potential of tablets. Some respondents express concern that tablet computers are being hailed as a magic cure-all. They warn that, as with any AT and AAC treatment technology, such as tablet devices must fit into the complete diagnostic and treatment scheme.

“I have become increasingly frustrated with the pervasive general attitude that an iPad is the answer to meeting a student’s AT and AAC needs. As someone who works closely with teams through a collaborative evaluation and decision-making process, it is often not the best AT and AAC tool.”

Differences in SLPs/Child vs. SLPs/Adult in Desire for More Training

Asked about a set of topics in which respondents would be interested in more information and/or training, positive response was quite high. The lowest ranked option, “How to write an effective evaluation report” was favored by 75% of respondents. Tablets and assessment tools received 91% agreement. SLPs/Child, however, express a higher level of agreement with the desire to learn than do SLPs/Adult. In some cases, the topics are school-related, so the lack of interest among SLPs/Adult is understandable. However, interest on the part of the SLPs/Adult lags behind that of SLPs/Child’ in every single case. This suggests that SLPs/Child are under more pressure to be proficient in AT and AAC than their counterparts with adult-only caseloads. The table below summarizes the results and highlights the difference between Child and SLPs/Adult.

Responses to: I would be interested in more information and/or training on the following topics:	SLPs/Child “Strongly or Somewhat Agree”	SLPs/Adult “Strongly or Somewhat Agree”
How to select the right tools for each client	91%	84%
How to keep up with changing technology	95%	<85%>
Overview of AT relevant to speech-language pathology (beyond AT and AAC)	89%	<75%>
Available assessment tools - what available and how to use them	93%	<79%>
Comparison of AT and AAC dedicated communication devices	88%	<72%>
Resources and strategies for funding (including grants) - this includes funding for mobile & tablet devices	90%	<74%>
How to write an effective evaluation report	78%	<61%>
AT for persons with Autism	91%	<64%>
Mobile & tablet devices (such as iPhones, iPads, etc.) as instructional tools and student supports - how they work with the IEP Goals	95%	<52%>
Collaborative teaming for AT in the schools	87%	<27%>

Table - Q14 - Shows combined “Agree somewhat” and “Agree strongly” responses for “I would be interested in information and/or training on the following topics”. < > = difference is statistically significant at a 90% confidence level.

Conclusions

The SLP profession has recognized the challenges that are raised in this study on an anecdotal basis for many years. Now, however, it is possible to quantify our understanding of knowledge of AT and AAC and suggest ways that everyone involved in speech-language pathology can move the issue forward. Given the goal of helping SLPs achieve competency in speech-language pathology treatment that uses all appropriate tools, including technology, the present research reveals that the state of providing AT and AAC apparatus and services is problematic on numerous levels. Underpinning this is a strong sense that the skill set of AT and AAC among SLPs needs to be improved, and that clients could benefit from additional numbers of SLPs with increased AT and AAC competencies.

- There are not enough AT and AAC competent SLPs:
 - SLPs consider neither themselves nor their peers to be truly capable of delivering AT and AAC to clients.
 - The profession does not seem to have a standard definition of what AT and AAC are, as well as an understanding of how AT and AAC can provide solutions to their clients.
- Most SLPs didn't learn AT and AAC in school and continuing education is difficult to get:
 - Educational approach to AT and AAC deficient and flawed
 - Mentors wanted but not easy to find
- School districts are decreasing or eliminating budgets for SLPs who provide AT and AAC and/or continuing education for those who are supposed to be providing those services
- Professional conditions are not always hospitable to AT and AAC:
 - Lack of funding for adequate evaluations, AT and AAC device options, and/or treatment.
 - Organizational (school district) structure frequently makes SLP responsible for AT and AAC but does not permit them to implement it.
- The circumstances of treatment delivery are not always optimal.
 - Too much narrow focus on specific devices and techniques.
 - Lack of integration with broader speech/language treatment approach

Recommendations

Possible solutions to the problem of AT and AAC competency among SLPs emerge both implicitly and explicitly from the research findings. Most of the recommended solutions shown below involve improving learning, training, and mentoring opportunities in both pre- and post-service education. These recommendations should be considered for advancing AT and AAC in SLP practice.

Making these recommendations happen, however, will involve cooperation between several organizations related to the SLP profession, including ASHA, ATIA, and others. Within ASHA, possible steps to take include having both the AT and AAC Special Interest Group (SIG) and School-Based SIG take key roles in defining the objectives, parameters, and timelines of implementing appropriate recommendations based on this study and other organized dialogues. Ultimately, from this mix of groups, a steering entity for the advancement of AT and AAC in the SLP profession could be established.

- ASHA is encouraged make AT and AAC a priority and collaborate with ATIA on offering a rich curriculum for continuing education as well as curriculum guidance for degree programs.
- Effect modifications in graduate school curricula
 - AT and AAC content needs to be integrated into courses that deal with standard treatment modalities, given that AT and AAC may be a possible treatment approach in a wide range of diagnoses such as Apraxia, Aphasia, voice disorders, neurological impairments, and others.
 - Work to improve knowledge and awareness of graduate faculty - a “train the trainer” type of approach to improve AT and AAC content in graduate coursework.
 - Possibly require SLP Master’s students to take specific coursework in AT and AAC or do practicums including AT and AAC as conditions of earning their Master’s Degree
 - Undergraduate and graduate programs should provide more elective coursework opportunities in AT and AAC.
- Provide more continuing education and conference opportunities
 - More robust, content-rich AT and AAC conference tracks
 - Online/Webinar continuing education
 - More richness and depth of online learning materials
- Facilitate mentoring as a path to AT and AAC proficiency
 - For AT and AAC as pure specialized disciplines
 - For AT and AAC as parts of the broader speech and language treatment regimen
 - For technology specific topics

Appendix – Survey Questions

1. What year did you receive your undergraduate degree?
2. What is your highest degree?
3. What is your primary practice setting? Check all that apply.
 - a. Schools - Pre-school thru Grade 12
 - b. Hospitals
 - c. Long Term Care/Skilled Nursing
 - d. Private practice
 - e. Out-patient/rehab
 - f. Other
4. What are the primary age groups that you serve? Check all that apply.
 - a. Birth - two
 - b. Ages three to six (Preschool)
 - c. Kindergarten to 12th Grade ages
 - d. Adult (Ages 21 to 64)
 - e. Older Adults (Ages 65 and older)
5. Please indicate your level of agreement with the following statements:
 - a. There are enough SLPs with AAC knowledge to meet the needs of consumers.
 - b. I had adequate preparation in AAC in my undergraduate and/or graduate program.
 - c. SLPs who include AAC in their practices are very knowledgeable about AAC intervention strategies, including but not limited to AAC technologies.(Strongly agree/Agree somewhat/Disagree somewhat/Strongly disagree/Not sure)
6. What factors would increase the availability of SLPs with AAC skills? (Rank from 1 to 7 with 1 being the most important item in the list.)
 - a. More AAC pre-service requirements.
 - b. More opportunities for continuing education in AAC.
 - c. Awareness of the opportunity for practice growth, based on the potential size of population needing services in AAC.
 - d. Better reimbursement for AAC assessments and AAC therapy.
 - e. More knowledge about available AAC products.
 - f. More information regarding evidence-based intervention practices in AAC.
 - g. Other.

7. What are the most important factors in pre-service education that would result in more graduating students practicing AAC effectively? (Rank from 1 to 7 with 1 being the most important item in the list.)
 - a. More required courses/credits in AAC.
 - b. More elective courses/credits in AAC.
 - c. Internship requirement in AAC.
 - d. Internship elective in AAC.
 - e. Mentoring by experienced AAC professionals.
 - f. Scholarships in AAC specialty.
 - g. Other.

8. What are the most important factors and tools that would enable SLPs to become more knowledgeable about AAC technology and intervention that incorporates AAC? (Rank from 1 to 7 with 1 being the most important item in the list.)
 - a. Live webinars
 - b. Recorded webinars and online knowledge bases
 - c. Continuing education on the job site
 - d. Mentoring by experienced AAC professionals
 - e. Continuing education at state conferences/conventions
 - f. Continuing education at national conferences/conventions
 - g. Other.

9. What are the barriers to increased preparation in AAC? (Rank from 1 to 8 with 1 being the most important item in the list.)
 - a. No time in the program for a required, "dedicated" course in AAC
 - b. Lack of AAC content integrated in other courses
 - c. Lack of faculty who are well-versed in AAC
 - d. Lack of AAC clinical opportunities in the University clinic
 - e. Lack of AAC clinical opportunities in field placements
 - f. Student lack of interest in this topic area
 - g. Individuals who can benefit are such low incidence it is not appropriate to dedicate a lot of time to this topic
 - h. Other

10. Please indicate your level of agreement with the following statements:
- I would be interested in being a mentor.
 - I would be interested in being mentored to enhance my skills.
- (Strongly agree/Agree somewhat/Disagree somewhat/Strongly disagree/Not sure)
11. Please indicate your level of agreement with the following statements:
- I am familiar with the IDEA 2004 definition of Assistive Technology (AT) devices and services.
 - I had adequate preparation in AT excluding AAC in my undergraduate and/or graduate program.
 - I would like to know more about the range of AT devices and services that can help improve the learning and communication competence of clients on my caseload.
 - A list of AT website and webinar offerings would be helpful.
 - Finding AT that can meet the needs of students with Autism Spectrum Disorders is a priority for me.
- (Strongly agree/Agree somewhat/Disagree somewhat/Strongly disagree/Not sure)
12. Who are your trusted sources for quality continuing AT training? (Rank from 1 to 7 with 1 being the most trusted source in the list.)
- ASHA-sponsored conferences
 - ATIA-sponsored conferences or webinars
 - AT vendors
 - Colleges and universities
 - Practicing SLPs sharing their experiences
 - AT users/families
 - Other
13. Please indicate your level of agreement with the following statements:
- I need to learn more about how to use tablets (iPad, etc.) and apps in my clinical practice.
 - I am familiar with the requirements that all (not just blind) students who have print disabilities must have access to print instructional materials in an accessible format, free of charge.
 - I am familiar with AT tools for adapting curriculum.
- (Strongly agree/Agree somewhat/Disagree somewhat/Strongly disagree/Not sure)
14. I would be interested in more information and/or training on the following topics:
- Overview of AT relevant to speech-language pathology (beyond AAC)
 - How to write an effective evaluation report
 - How to select the right tools for each client
 - AT for persons with Autism
 - Available assessment tools - what's available and how to use them
 - Collaborative teaming for AT in the schools.
 - How to keep up with the changing technology
 - Resources and strategies for funding (including grants) - this includes funding for mobile & tablet devices (such as iPhones, iPads, etc.) and apps

- i. Comparison of AAC dedicated communication devices
 - j. Comparison of communication apps
 - k. Comparison of AAC dedicated communication devices vs. apps
 - l. Mobile & tablet devices (such as iPhones, iPads, etc.) as instructional tools and student supports -
how they work with the IEP Goals
- (Strongly agree/Agree somewhat/Disagree somewhat/Strongly disagree/Not sure)