

RESEARCH

Special education and AAC devices: Teachers' perspectives on training needs and support


Journal of the American Academy
of Special Education Professionals

2025, Vol. 20(3) 147 - 161

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DOI: 10.64546/jaasep.594



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Abstract

This study investigates special education teachers' perceptions of the effectiveness of support and training received while working with Augmentative and Alternative Communication (AAC) device users. The research evaluates important components of AAC implementation, such as the range of support available, quality of training programs, degrees of adaptation, and levels of inter-professional support from a teacher's perspective. The conclusions drawn from this study indicate a need for continuous professional development, which necessitates personalized, individual training approaches and interdisciplinary collaboration to enhance the use of AAC devices. The study also confirms that individualized training is crucial in meeting the unique requirements of AAC users and special education teachers. These findings are meaningful in understanding AAC device use in special education classes, leading to appropriate interventions and improved communication outcomes among individuals using low- and high-tech devices.

Keywords: augmentative and alternative communication, functional communication, special education, teacher training

Introduction

AAC devices are vital in supporting special education and serve as a lifeline to people with communication impairments. They provide them with the means of expression, relating with others and becoming independent. AAC devices include simple picture boards to advanced speech-generating technology; these tools enable learners with different requirements to access education and participate in social activities (Beukelman & Light, 2020).

Teachers learn the use of devices that match his or her students' distinct communicative needs within their academic environment (Locke & Mirenda, 1992). Moreover, they need to continually assess instruction and model effective incorporation (Blackstone et al., 2007). The teacher serves as an advocate who makes sure all students have everything they need to

participate and engage in the curriculum and other classroom activities.

Training Needs for Special Education Teachers

Initial teacher training typically offers an overview of different AAC types, basic operational principles and ways to effectively use them in class. Educators often have a thorough review on technology, and this is done through hands-on experience with devices as well as being given case studies that illustrate successful implementations (Walker & Chung, 2022). Nonetheless, there still exists a major gap concerning AAC in teacher training programs. Many teachers are not well prepared to assess or even implement AAC solutions in their classrooms when entering the field of special education (Andzik et al., 2017). This is because the AAC training programs do not keep pace with technological advancements and therefore it lacks comprehensive hands-on training with many types of AAC devices that cater for diverse needs of students who have complex communication requirements.

In order to address this gap, educators must embrace continuous professional development. The importance of ongoing learning cannot be overstated; it helps professionals stay proficient in the use of AAC tools and keeps them updated about developments in the area (Walker & Chung, 2022). The result is that such continuing education enables teachers to make informed choices regarding suitable devices for the student's individual requirements so that they can adapt how they communicate. It also reinforces best practices for integrating AAC use into the classroom thereby improving overall learning experiences of children with communication disorders.

Various effective strategies exist in successful professional development programs related to AAC. Such initiatives may include workshops where practical experience on assistive technologies may be gained while others provide tailored training opportunities on specific systems by partnering with manufacturers involved in making such products. In addition, these programs promote collaboration amongst educators by encouraging them to learn from each other as well as experts in the field (Leatherman & Wegner, 2022). Furthermore, online

courses and webinars offer flexible options to improve skills and knowledge among teachers. These platforms usually feature troubleshooting modules, customization of classroom devices, and new developments within AAC fields (Boster, 2023). By emphasizing initial training and ongoing professional development, the educational system can provide comprehensive support to special education teachers, equipping them with the necessary skills to support the full potential of AAC devices for their students.

Challenges Faced by Teachers in AAC Implementation

There are several problems that can arise and hinder the smooth integration of AAC devices in classrooms. These obstacles include technological barriers that may be significant (Andzik et al., 2017; McNaughton et al., 2008). AAC devices, given their various attributes and functionalities, could be somewhat complex and even unreliable. Issues such as software updates, hardware breakdowns, and compatibility issues with already existing classroom technology have to be addressed with some level of expertise that is not provided during teacher training programs.

Additionally, integrating AAC into the curriculum also poses its own challenges. Inadequacy in the standard curriculum's attention to the needs of users of AAC would then require educators to adjust their lesson plans so that they integrate appropriately the AAC devices (McNaughton et al., 2008). It can take a lot of time and effort since it involves finding a fine line between educational standards while accommodating communication abilities for individuals using AAC.

There is also insufficient time and resources for comprehensive training on AAC (Andzik et al., 2017). Many educators may feel they have more responsibilities than they can handle, in addition, there are limited professional development programs specifically dedicated to dealing with these conditions. Failure to receive enough training makes teachers rely on self-learning which may not prepare them well enough for the complexities of using AAC technology (McNaughton et al., 2008). It is common for teachers' opinions about how successful their students will be when using an AAC device depends on how

competent they feel when operating these devices themselves (Soto, 2009). This explains why special education teachers may often lack confidence in whether an individual student will use an AAC device effectively in the classroom.

The specific needs of students using AAC create additional challenges for teachers. The need for individually tailored strategies increases if each student requires a unique approach. When educators must assess and personalize AAC solutions for more than one student, this may be a complex task (Walker & Chung, 2022). Because of this, a single approach cannot work and the task of customizing technology for each student can be considerable, especially if the school district does not have a strong support system.

Despite their potential to change the lives of students with language impairments, teachers face various difficulties in using AAC devices. Overcoming these obstacles requires systematic support, comprehensive training, and adequate resources. It is crucial that avenues for communication are provided to all students within their educational settings.

Support Frameworks for AAC in Education

School districts need a strong support system for AAC devices to be effectively integrated and maintained in the classrooms. Among the key starting points are school policies and administration that constitute institutional support for this process (Burnham et al., 2023). It's important for administrators to recognize the importance of AAC in education and advocate for it through creating policies as well as the allocation of resources. Schools can promote an environment where both teachers and students learn to value diverse communication (Leatherman & Wegner, 2022). In addition, administrative support is necessary to provide training opportunities and purchase current AAC technologies.

AAC specialists and speech-language pathologists (SLPs) would be beneficial in creating an interdisciplinary level of support. The educators benefit from having SLPs involved in the evaluation of the student's needs, choosing appropriate AAC devices, and developing communication strategies (Bird & Kusior, 2016). On their part, SLPs work

collaboratively with educational programs to devise personalized plans that integrate AAC into the curriculum of students with complex communication needs.

Beyond the interdisciplinary level of support, teachers with peer support emerge as important aspects of implementing effective AAC services. Collaborative teaching practices among teachers encourage knowledge sharing about what works best in terms of using AAC more effectively as well as engaging and encouraging others who may be implementing them. These groups can be either formal or informal communities depending on whether they have been created by the school system or simply exist due to common challenges facing teachers (Leatherman & Wegner, 2022). They act as a resource of materials and information between teachers for mutual support.

The introduction of mentoring programs holds potential value to the implementation of AACs. Pairing seasoned educators experienced in AAC with those new to the profession will ease the learning curve by providing guidance and reassurance. This sort of mentorship is critical since it is not possible to completely build on all the knowledge the teachers have learned that is not written but learned outside of formal training. Information such as this from real-world experiences can be valuable to other teachers in the classroom.

Supportive frameworks, whether institutionally based or peer-based, are essential in developing a school culture that accepts AAC as a powerful tool for empowering students' communication, participation, and learning. It is through these support systems that teachers feel reassured from peers in their community and not as if they are left alone to find their own way.

Efficacy of Training Programs

AAC training research for educators is characterized by the strong relationship between teacher preparation programs and their readiness to implement AAC. There have been several studies that demonstrated improved confidence and proficiency in AAC devices when educators receive practical and ongoing training (Alexandra da Fonte et al., 2022). The best training approaches include practical elements such as interaction with the device directly and

collaborative problem solving with peers. In addition, follow-up support and advanced training analyzing intricacies of using AAC in various educational settings can make these efforts more effective (Senner, 2018).

There are several methods which have been devised through research leading to effective ways of training on how to use AAC. These include interactive workshops where participants actively engage, case-based learning for hands-on application, and opportunity for participants' reflection and discussion (Norrie et al., 2021). Successful trainings entail understanding theory about AAC devices as well as personalizing communication systems to meet unique needs of each learner, weaving it into education activities, handling common problems.

Teacher feedback on AAC training programs consistently highlights the significance of practical experience and the chance to learn from and collaborate with peers (Sanders et al., 2021). Educators frequently express a need for continuous professional development, recognizing that while initial training sessions are beneficial, they are inadequate to address the long-term requirements of AAC implementation (McNaughton et al., 2008). They advocate for ongoing access to resources and support networks that empower them to adapt their practices following advancements in AAC technology and educational methodologies.

The impact of quality training on student outcomes cannot be overstated. Training teachers who are competent in assessing students' needs so they can effectively implement an AAC system increases students' engagement level (McNaughton et al., 2008). Teachers who are prepared help facilitate smooth transitions for students into the use of AAC devices, increasing inclusivity where every child is accommodated. That way, communication skills of the students and their academic performance are greatly improved thus underlining why there is a need for comprehensive training on AAC for educators (Soto, 2012). In essence, high-quality AAC training for teachers is about being able to deliver effective instruction as well as ensuring that students with complex communication needs succeed academically and socially.

Teachers' Perspectives on AAC Device Use and

Training

Future educational strategies can be shaped by teachers' views regarding the effectiveness of AAC devices and training programs. Most educators argue that AAC training is important, but it does not fit in classroom realities as they are dynamic and multifaceted (Alexandra da Fonte et al., 2022). They share experiences of being trained in using AAC devices, which although informative, do not prepare them well enough for the subtle challenges inherent in adapting and implementing AAC devices for diverse students (McNaughton et al., 2008). This issue of teacher's narratives emphasizes a discrepancy between theoretical knowledge and practical application.

We know that AAC use is often difficult for many teachers. Some common barriers include lack of on-going technical support, limited time to learn and customize an AAC device, and difficulty integrating AAC into an already existing curriculum (McNaughton et al., 2008). Additionally, educators may express dissatisfaction with certain training programs that do not account for different student abilities, availability of various devices or the differences in classrooms and teaching styles.

Educators often argue for personalized or interactive learning approaches when it comes to enhancing the effectiveness of AAC training programs. They actively seek out scenarios that closely resemble their classroom settings and opportunities to practice using AAC devices in real time under the guidance of AAC experts (Rackensperger, 2012). Furthermore, teachers emphasize the importance of robust post-training support systems, such as on-call technical assistance, online forums for knowledge sharing and resource exchange, and in-school coaching provided by AAC specialists (Alexandra da Fonte et al., 2022). Furthermore, there has been an increasing demand for AAC training to be included in regular professional development schedules. This allows educators to continually refine their skills, while keeping pace with new technological advancements and methodologies applied in this field.

Teachers want comprehensive training programs that are not limited to one-time events but rather offer continued support. These programs will have to be flexible as the

nature of AAC is continuously evolving with a learning process characterized by constant changes (Lilienfeld & Alant, 2005). The teachers are aware of how AAC devices can change the lives of their students and thus seek training opportunities that enable them to use this technology in their teaching practices.

AAC Research Gaps

Several areas of AAC training research with gaps need further study. One of these areas is the lasting impact of AAC training on teacher practices and student outcomes. Based on existing studies, teachers improve immediately after training interventions, but research is needed to monitor sustained changes in teaching strategies, teacher confidence, and student progress over time (Sanders et al., 2021). Also, the research does not often depict the experiences of special education teachers in rural or economically challenged schools as much as it does in an urban setting.

Research is needed to reveal special education teachers' experiences regarding support and training on AAC devices. These teachers generally work with children who have severe communication needs (Alexandra da Fonte et al., 2022). However, academic research lacks a thorough examination of educators' successes and challenges. As such, understanding their ongoing professional growth requirements, supportive mechanisms and institutional barriers can enhance the effectiveness of specific improvements in AAC training and support programs.

Additional AAC research could address these gaps, leading to more informed decisions. For instance, continuous, context-specific teacher training that is informed by research may enhance retention rates and competencies within special education teaching workforce. Additionally, if we knew how effective AAC device use is across different socio-economic backgrounds or cultures, it would be possible to provide equal services based on equality for all students while improving communication for many. Furthermore, exploring family engagement across various populations may provide specific information on approaches that could support families engaged in the AAC process.

By addressing these gaps through further research, we can develop more advanced inclusive training programs, improve support systems for educators at all levels, and develop evidence-based policies. These advancements may significantly improve academic and social achievements for students who rely on AAC (Klassen et al., 2010). They also emphasize the crucial role of evidence-based research in promoting inclusive educational practices. The objective of this study is to explore the following research questions from the perspective of special education teachers: 1) How effective are current support and training programs in enhancing special education teachers' skills and device proficiency working with AAC device users, 2) What level of satisfaction do special education teachers report regarding the support and training they receive for working with AAC device users, 3) Which improvements do special education teachers suggest for AAC device support and training programs, and 3) How does collaboration among professionals, families, and communication partners influence the success of AAC device users, and what role does communication play in establishing effective support systems?

Methods

Participants

Educators who were directly involved with AAC devices in special education settings were recruited for this study. The study team reached out to 147 special education directors in a southeastern state of the United States, who facilitated the distribution of the survey to their special education teachers who work with students using both low- and high-tech AAC devices. This approach ensured that responses authentically reflected the experiences and insights of educators actively engaged in teaching and supporting students who use AAC devices. The initial survey response included 44 special education teachers who began the survey. Six teachers did not complete the survey and were excluded from the study. The final sample size included 38 special education teachers (36 female, 2 male) who answered all questions on the survey. For this study, the term "special education teacher" will be called "teacher."

Data Collection and Materials

A convergent parallel design mixed-methods approach was used for this study. A 35-item Qualtrics survey was developed by the authors that included (a) Likert scale questions that facilitated the collection of quantitative data and enabled an analysis of trends and patterns, (b) multiple choice items, and (c) open-ended questions that allowed participants to freely express their experiences and viewpoints freely, yielding more comprehensive information.

Although the survey covered various aspects of AAC

device usage, the current study focuses on a subset of questions that directly align with our specific research objectives. Out of the 35-item survey, only 14 questions (refer to Table 1) directly addressing teachers' support and training needs were selected for this study. This focused approach allows for a more targeted analysis and discussion that aligns with the research objectives. The decision to concentrate on specific questions was also driven by the desire to provide comprehensive insights into specific areas of interest within the broader survey scope.

Table 1

AAC Survey Questions: Training and Support

Focus	Question number	Question	Response choices
Usability and technical issues	1	Please rate the extent to which you or the AAC device user have faced challenges related to the usability and technical functionality of the AAC device. (Select one)	Not a challenge Mild challenge Moderate challenge Significant challenge Extremely challenging
Lack of ongoing support/training	2	Please rate the extent to which you or the AAC device user have faced challenges due to the lack of ongoing support or training for the device. (Select one)	Not a challenge Mild challenge Moderate challenge Significant challenge Extremely challenging
Ongoing professional support	3	Please rate the effectiveness of ongoing professional support (e.g., speech-language pathologist, AAC specialist) in addressing challenges related to AAC device usage. (Select one)	Not effective Somewhat effective Moderately effective Very effective Extremely effective
Training for communication partners	4	Please rate the effectiveness of training communication partners (family, educators) in helping overcome challenges related to AAC device usage. (Select one)	Not effective Somewhat effective Moderately effective Very effective Extremely effective

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Customization of device settings	5	Please rate the effectiveness of customizing the AAC device's settings to suit the individual's communication needs in addressing challenges. (Select one)	Not effective Somewhat effective Moderately effective Very effective Extremely effective	
Peer support and community engagement	6	Please rate the effectiveness of peer support groups and community engagement in assisting with overcoming challenges related to AAC device usage. (Select one)	Not effective Somewhat effective Moderately effective Very effective Extremely effective	
Online resources and forums	7	Please rate the effectiveness of online resources (e.g., tutorials, forums) in helping you address challenges related to AAC device usage. (Select one)	Not effective Somewhat effective Moderately effective Very effective Extremely effective	
Extent of Training and Education	8	Please indicate the extent of training you or the AAC device user have received on using the AAC device for effective communication. (Select one)	Minimal training (less than 1 hour) Basic training (1-3 hours) Moderate training (3-6 hours) Extensive training (more than 6 hours)	
Satisfaction of training	9	How satisfied are you with the level of training received in addressing challenges related to AAC device usage? (Select one)	Very dissatisfied Somewhat dissatisfied Neutral Somewhat satisfied Very satisfied	
Suggestions for improving training and support	10	Please provide any suggestions or recommendations for improving the training and support provided for AAC device users and their communication partners.		
Collaboration between professionals and families	11	Rate the level of collaboration between professionals (speech-language pathologists, educators) and families in addressing challenges related to AAC device usage. (Select one)	Very low collaboration Low collaboration Moderate collaboration High collaboration Very high collaboration	

Open communication about challenges	12	Indicate the extent to which open communication exists about challenges and concerns related to AAC device usage among communication partners. (Select one)	Very limited communication Limited communication Moderate communication Frequent communication Very frequent communication
Anticipated future device use	13	Do you anticipate that the individual will continue using the AAC device for communication in the future? (Select one)	Yes, definitely Yes, with adjustments Unsure No
Training satisfaction	14	How satisfied are you with the following components of the training and support you've received?	Understanding of AAC device functions Skills developed for troubleshooting common problems Knowledge gained about customizing the device Interaction and support from professionals during training
Training effectiveness	15	Rate the effectiveness of the following training modules you've experienced or aware of (1 = Extremely ineffective and 10 = Extremely effective).	Hands on training Online tutorials and webinars One-on-one training with a professional Group workshops and seminars Peer-led training sessions

Procedure

After receiving approval from the university's Institutional Review Board (IRB), an email was sent to special education directors. This email detailed the survey and requested that directors forward it to their teachers. The survey was accessible via a Qualtrics link. Upon clicking the link, participants encountered a

digital informed consent form. This form offered them the choice to either proceed with the survey or decline participation. Those who consented were then directed to the survey items, while those opting out were taken to a page that acknowledged their decision and facilitated their exit from the study.

The data collection phase lasted approximately one

month, with a follow-up email sent at the two-week point and a final reminder at the beginning of the fourth week. To encourage participation and acknowledge respondents' time and effort, the study offered a chance to win a \$100 Amazon gift card. Teachers who completed the survey could enter a drawing for the gift card.

Results

Effectiveness of Professional Support

The survey data on the efficacy of current support and training programs for teachers who work with AAC device users unveiled a multifaceted perspective. The effectiveness of ongoing professional support (e.g., speech and language pathologists, AAC specialists) in addressing challenges related to AAC device usage was rated on a scale from 1 (Not effective) to 5 (Extremely effective). About 3% of participants rated current support and training as ineffective, with an additional 21.05% endorsing ongoing training efforts as *somewhat effective*. Nearly 55% of teachers found that ongoing professional support was *very* (34.21%) to *extremely effective* (21.05%). Taken together, the results suggest that ongoing training and support efforts are generally perceived as effective in addressing challenges related to AAC device usage.

Effectiveness of Training Communication Partners

Teacher's perceptions of the survey item on the effectiveness of training communication partners (e.g., family, educators) in helping overcome challenges related to AAC device usage. Just over 10.53% of teachers reported that it was *ineffective*, about 26.32% of respondents endorsed it *somewhat effective*, and approximately 21.05% of teachers endorsed *moderately effective*. The remaining responses included 31.58% of teachers indicating *very effective* to 10.53% *extremely effective*. This pattern of results suggests that most teachers found training communication partners valuable, albeit to varying degrees.

Effectiveness of Customizing Device Settings

The survey item on customization of AAC device

settings demonstrated mostly positive responses. Only about 5% of teachers rated customization as *not effective*. The remainder of respondents (about 95%) found customization *somewhat effective* (21.05%), *moderately effective* (21.05%), *very effective* (21.05%), or *extremely effective* (31.58%) in addressing AAC challenges.

Effectiveness of Peer Support in Addressing Challenges

The survey yielded an array of responses on the perceived efficacy of peer support groups and community engagement in addressing challenges related to AAC devices. Approximately 21% of teachers perceived these support mechanisms as *not effective*, while another 21% perceived them as *somewhat effective*. In contrast, about 23% indicated a moderate level of benefit from these support systems (e.g., *moderately effective*), and about 34% rated them as *very* (23.68%) or *extremely effective* (10.53%).

Effectiveness of Online Support

On evaluating the efficacy of online resources, such as tutorials and forums, in addressing challenges associated with AAC device usage, teacher responses indicated a diverse range of experiences. Only about 5% of teachers rated online resources as *not effective*. In contrast, approximately 34% of teachers rated them *somewhat effective*, while nearly 29% found them *moderately effective*. Approximately 32% of teachers deemed these resources *very* (21.05%) or *extremely effective* (10.53%). This wide range of responses suggests that although many teachers found online resources helpful in addressing challenges related to AAC device usage, the level of effectiveness varied significantly among individuals.

Extent of Training Completed

When asked about the extent of training received, teachers endorsed a range of readiness to use AAC devices effectively. Nearly 26% reported *minimal training* (less than 1 hour), 32% reported *basic training* (1-3 hours), 32% reported *moderate training* (3-6 hours), and nearly 11% reported *extensive training*

(more than 6 hours). These responses suggest room for improvement to address the diverse needs of AAC device users and their communication partners.

Level of Satisfaction for Support and Training

When teachers were asked about satisfaction with levels of support and training for AAC users and their families, the results were mixed. Approximately 26% of teachers were *very* (10.53%) or *somewhat dissatisfied* (15.79%) with training levels, while a similar number of teachers were *somewhat* (26.32%) or *very satisfied* (13.16%) with training levels. The remaining 34.21% of teachers were *neither satisfied nor dissatisfied*.

Levels of Satisfaction with Specific Components of Training

The survey examined the satisfaction levels regarding specific aspects of training and support. The results, measured on a scale of 0 to 10, where 0 represents very dissatisfied and 10 represents very satisfied, unveiled a range of responses.

1. Understanding of AAC Device Functionalities:

On average, teachers rated their understanding of AAC device functionalities at 6.49. This score indicates a moderate level of satisfaction with their comprehension of how these devices operate.

2. Skills Developed for Troubleshooting

Common Problems: The satisfaction level concerning skills for troubleshooting common problems with AAC devices was lower, with an average rating of 4.97.

3. Knowledge Gained About Customizing the

Device: Teachers reported an average satisfaction score of 5.16 for the knowledge gained about customizing AAC devices.

4. Interaction and Support from Professionals

During Training: Interaction and support from professionals during the training process received an average rating of 5.97.

These findings suggest that while there is a reasonable level of satisfaction with some aspects of the training and support for AAC devices, there are also notable areas for improvement, particularly in developing troubleshooting skills and deepening

knowledge about device customization. The variation in satisfaction levels across different training components also emphasizes the need for more tailored and comprehensive training approaches to address the diverse needs of teachers working with AAC devices.

Challenges in Usability and Technical Functionality

Teachers were asked to rate the challenges they or the AAC device users they represent faced regarding the usability and technical functionality of the AAC device. The responses were divided into five categories, ranging from 'Not a challenge' to 'Extremely challenging.' Approximately 18% of participants indicated that usability and technical functionality were *not a challenge*. Most teachers (42.11%) reported these issues as *mildly challenging*. Just over 21% of participants endorsed *moderately challenging*. Approximately 18% of teachers found these aspects to be *significant* (10.53%) or *extremely challenging* (7.89%).

Challenges Due to Lack of Ongoing Support

Teachers were asked to rate their challenges due to a lack of ongoing support or training for AAC devices. Nearly 29% reported that the lack of ongoing support or training was *not a challenge*, while the same amount endorsed it as a *mild challenge*. About 13% of teachers reported the lack of ongoing support as a *moderate challenge*, with another 18% and 11% endorsing *significantly* (18.42%) or *extremely challenging* (10.53%), respectively.

Effectiveness of Training Modules

The survey questions on the effectiveness of various AAC device training modules, rated on a scale from 1 (Extremely ineffective) to 10 (Extremely effective), provided insightful results. Among the training modules evaluated, hands-on training received the highest average effectiveness score of 7.14, suggesting that this approach is the most effective for teachers. One-on-one training with a professional was also well-regarded, with an average score of 6.65, indicating its perceived effectiveness. Group

workshops and seminars scored an average of 6.17, suggesting a generally positive reception, although with some variability in effectiveness. Peer-led training sessions received a slightly lower average score of 5.94, indicating that while they are generally effective, experiences varied among teachers. Online tutorials and webinars, with an average score of 5.12, were rated as moderately effective, pointing towards the need for improvement in this area to meet the participants' needs better.

Importance of Collaboration

Teachers were asked to assess the level of collaboration amongst professionals, such as SLPs, educators, and families, in addressing challenges associated with AAC device usage. The rating scale ranged from 1 (indicating very low collaboration) to 5 (indicating very high collaboration). The findings indicated that a moderate level of collaboration was the most frequently chosen response (42.11%). Approximately a quarter of the teachers (26.32%) rated the collaboration as high, while 13.16% (5 participants) perceived it as very high. Fewer teachers reported that collaboration was *low* or *very low* (approximately 13% and 5%, respectively).

Expectations of Future Use of AAC Device for Communication

Teachers were asked about their expectations regarding the individual's future use of the AAC device for communication. The response options ranged from "Yes, definitely" to "No." Nearly half of the teachers (44.74%) expressed confidence that the individual would definitely continue using the AAC device. About 16% of teachers believed the individual would continue using the device with some adjustments. Nearly 29% of teachers expressed uncertainty regarding the future use of the AAC device, which reflects the intricacies and diverse circumstances surrounding AAC device usage. Finally, approximately 11% of teachers indicated that they do not anticipate the individual will continue using the AAC device.

Teachers Suggestions and Recommendations for

Improving Training and Support

When developing AAC device training programs, valuable insights can be gained from feedback provided by special education teachers who work closely with AAC device users and their communication partners. A recurring theme in their suggestions highlights the importance of comprehensive, practical, and accessible training for educators and caregivers alike.

Several teachers have emphasized the need for a deeper understanding of AAC devices before introducing them to students. This includes acknowledging the ongoing need for the device and refraining from treating it as an inconvenience. Some have also suggested that training should emphasize the benefits of incorporating AAC devices into instruction, not only for AAC users but for all students, to promote language development and foster inclusivity.

Hands-on training emerged as a significant recommendation, emphasizing the need for sufficient time dedicated to effective teaching. Some educators pointed out that online-only support from AAC company representatives may not be as practical in certain situations. There is a call for comprehensive training at the school or district level to address this, going beyond reliance solely on speech-language pathologists (SLPs) or AAC specialists.

Furthermore, integrating training across different environments, such as transitioning from home to school use, was also highlighted. It is recommended to involve all educational staff, including principals, classroom teachers, and support personnel, to ensure widespread understanding and successful implementation.

Some educators emphasized the significance of regular and easily accessible training, including increased opportunities to participate in training sessions. Additionally, when students receive a new device, they often lack accompanying training, which requires speech-language pathologists (SLPs) and

students to collaborate in finding solutions, potentially hindering effective communication.

To showcase the practical use of specific devices, it was suggested to conduct training sessions both at home and in school, providing guidance to parents and teachers. Furthermore, the availability of ongoing support from representatives after the initial training sessions was perceived as advantageous. Various recommendations were put forth to support teachers, including providing loaner devices for practice and offering multiple training opportunities, both prior to and during the child's use of an AAC device. The importance of emphasizing language instruction, consistent usage, and creating a rewarding experience for the child was also underscored.

Certain teachers expressed a need for additional time with the device to enhance familiarity and a preference for more hands-on training. The significance of online training for educators and standardized training for all individuals involved with the student was also highlighted. Ensuring the child's physical ability to interact with the device, such as through touch and pointing, was an essential aspect of the testing process. Furthermore, teachers expressed a need for comprehensive training on integrating AAC devices in the classroom and additional support within the learning environment.

These suggestions emphasize the necessity for comprehensive and widespread training programs in AAC device usage. These programs should be tailored to address the specific requirements of educators, caregivers, and students, covering both practical and theoretical aspects of AAC device utilization.

Discussion

Survey results have yielded valuable information about the complexity of AAC support and training programs for special educators that reiterate or reflect foundational frameworks highlighted in the literature. The positive regard for professional support among our respondents highlights the significance of ongoing collaboration with SLPs and AAC specialists. It reflects

insights provided by Burnham et al. (2023) and Bird & Kusior (2016), who stressed that strong institutional support and interdisciplinary teamwork are vital in effectively using AAC technologies throughout the whole education system beyond the classroom. They suggest that a partnership is necessary for broader integration and efficiency of AAC systems into education environments. In terms of the efficiency of professional support and training, many teachers' opinions were generally positive, indicating its significance as an essential component for successful AAC implementation. This view aligns with the literature that advocates for practical, comprehensive programs and emphasizes collaborative problem-solving techniques such as those suggested by Alexandra da Fonte et al. (2022) and Senner (2018). However, these varied ratings on the effectiveness of training suggest that as technology advances and education landscapes change, there needs to be adaptation in these training programs.

Our findings present the perceived importance of training both teachers and families in AAC practices. This means we can see how success within an AAC environment hinges on more than just one user-supporter within a broader environment for all users (Leatherman & Wegner, 2022). Teachers' high approval ratings for device customization and peer assistance highlight a key realization: personalization and communal support are increasingly vital in addressing AAC-related issues. The trend towards personalized approaches and tapping into collective wisdom in educational settings is a frequent topic in AAC literature. This indicates that effective changes in children's education systems require tailored strategies to meet diverse user needs. By tapping into the knowledge of educational communities, we can better address specific user requirements. According to Norrie et al. (2021), this method not only enables personalized support for AAC users but also empowers students with special needs to advocate for themselves.

The challenges teachers expressed and how they could be resolved regarding AAC training show that inclusive hands-on and ongoing training sessions are necessary. These insights correspond to the literature that focuses on the essentiality of mentorship programs and peer support in effective AAC implementation, thus highlighting that mentorship and peer learning are under-tapped resources in today's training models (Leatherman & Wegner, 2022). Our findings agree with the current literature about AAC support and instructions and point out areas that can be investigated further for future research.

Implications

The findings of the current study have several implications on increasing AAC instruction and support. One notable area is a change in the way AAC training programs are presented, which should be comprehensive and continuous, which entails blending theoretical knowledge and practical experience with AAC tools. This approach ensures that teachers are equipped with the skills to easily integrate AAC tools into classroom interactions. The need for inclusive training that can be tailored to fit specific educational contexts such as under-resourced or rural settings. To achieve equal access to AAC between different populations, we can develop flexible training approaches and construct custom-made support structures that target specific challenges.

Successful implementation of AAC device use cannot be achieved without interdisciplinary collaboration. This study promotes a unified approach towards the development of individual communication strategies by encouraging a collaborative environment between speech language pathologists, educators, school psychologists, and other stakeholders. Moreover, it supports policy reforms in education by advocating for policies prioritizing provision of resources and training on AAC which supports an inclusive educational environment where all students can benefit.

Families play a crucial role in ensuring the effective

use of AAC strategies beyond the classroom. We advocate for workshops and home materials to promote a consistent AAC approach across school and home environments. Furthermore, establishing online resources, lending libraries for devices like iPads, PECS binders, and integrating AAC training into teacher certification programs are suggested steps to implement these recommendations. By following these suggestions, educational institutions can enhance the integration of AAC and promote inclusivity.

Practical Initiatives

We suggest four practical initiatives to further enhance the implementation of AAC devices in educational settings. First, we suggest the creation of comprehensive online resource hubs to provide educators with access to up-to-date training materials, instructional videos, and AAC strategy discussion forums. Second, we suggest the establishment of AAC device lending libraries in school districts to enable educators and families to experiment with different devices and facilitate informed selection and customization decisions. Third, we recommend implementing regular feedback sessions that include educators, families, and students, as these interactions can offer critical insights for the continuous enhancement of AAC usage and training. Additionally, fostering collaboration with AAC device manufacturers would enable access to specialized training and updates on emerging technologies... Fourth, we suggest integrating AAC training into standard teacher certification and professional development programs to ensure that educators possess the necessary skills and knowledge to enhance the effectiveness and practicality of AAC implementation in educational environments.

Conclusion

This research provided valuable insights into educator perceptions of using and integrating AAC devices in special education classrooms. Our findings highlight the critical need for comprehensive and ongoing training programs encompassing practical and

hands-on AAC experiences. We identified specific challenges and noted the importance of collaboration among special education teachers, SLPs, school psychologists, and families. We documented the critical role of educational policy in supporting AAC implementation and emphasized the need for increased funding and equitable resource allocation. This research stresses the significance of adopting a tailored approach to AAC implementation and considering the multifaceted needs of special education teachers.

Limitations

This study contributes important insights into the utilization of AAC devices in special education; however, there are some methodological limitations to mention. Due to time and resource constraints, the survey instrument was developed without being piloted. We believe that although this would have improved the accuracy of the survey, we still received useful findings. Our research team is composed of educators, licensed psychologists, school psychologists, and board-certified behavior analysts, all of whom have extensive experience with the use of AAC devices by special education students and their communication needs. Although our specialty is not limited to AAC devices only, the broad-based perspectives offered by these diverse backgrounds have contributed to our study.

We believe our participants have a professional background as special education teachers, providing

them with a shared understanding of the survey.

Although individuals may interpret survey questions differently, these varied interpretations illustrate professionals' differing experiences in the field which further enhances comprehension of this study's results. It should be noted that our research did not use Cronbach's Alpha to examine internal consistency between items of the survey. The absence of such data implies caution when interpreting response uniformity; nevertheless, this data can still be helpful for understanding how AAC devices are applied within educational settings. Despite certain limitations, the results contribute to the literature and understanding of AAC device use in the special education classroom.

Future Research

Further research is needed in this area to improve our understanding of AAC implementation and its long-term impacts. Key areas for future investigation should examine the long-term effects of AAC training on educators' practices and students' communication outcomes. Additionally, it is important to explore the efficacy of AAC in diverse socio-economic and cultural contexts. This exploration would provide insights into how different settings influence the implementation and success of AAC strategies, potentially leading to more tailored and inclusive approaches. Research focused in these areas can aid in developing effective AAC training and support programs that cater to diverse communities, ensuring equitable access and use of AAC technologies.

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