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## Helping the General Education Team Support Students Who Use AAC

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### Abstract

*To be successful, students who use AAC and attend general education classes require extensive supports and frequent practice with their communication systems. This article explores the challenges faced by educational teams and discusses strategies for helping general education teachers, paraprofessionals, and others provide the AAC learning and practice opportunities these students need to maximize their communication skills and academic achievement.*

Students who use AAC require extensive support to succeed in their general education classrooms (Kent-Walsh & Light, 2003; Soto, Müller, Hunt, & Goetz, 2001). These students often face the task of simultaneously learning operational aspects of AAC technologies and developing language skills that are assumed to be possessed by their peers in general education classrooms. Unlike the majority of their classmates, most students who use AAC begin the school year struggling to express their thoughts in a timely way using age-appropriate grammar, syntax, and morphology. Additionally, their semantic development and narrative skills often lag behind those of their peers. At the same time, students who use AAC and are served in inclusive classrooms must learn the appropriate academic content and demonstrate their knowledge during formative and summative assessments.

The concept of inclusion is operationalized in many different ways throughout our nation's educational system. In some inclusive settings, special educators or even paraprofessionals assume the majority of the responsibility for teaching the student with disabilities in the general education classroom (Jennings, 2007). However, for the purposes of this article, inclusion refers to situations in which students with disabilities receive instruction by general education teachers in general education classrooms (Mastropieri & Scruggs, 2000). Support services are provided in the general education classroom (as opposed to 'pull out'). This model of inclusion requires "the provision of adaptations and accommodations to classroom

curriculum to ensure that the student will benefit from the placement,” but does not require that the student perform at the same level as nondisabled peers (Wolf & Hall, 2003, p. 57).

The decision regarding the inclusion of students with AAC needs into general education is best made based on the types of activities that take occur in the general education setting and the student’s specific IEP objectives (Wolf & Hall, 2003). Educators, speech-language pathologists (SLPs), and paraprofessionals supporting these students face multiple challenges, such as learning the operational aspects of the AAC system and understanding how best to integrate these students into classroom activities so that they can maximize their academic achievement. This article focuses on strategies for SLPs who seek to help educators and paraprofessionals serving students who use AAC in inclusive classrooms.

### Clarifying Expectations

Well-defined roles, responsibilities, and expectations are the starting points for implementation of AAC, language facilitation, and additional supportive strategies by educators, paraprofessionals, and others working with students who use AAC. Empirically supported models of inclusion require strong collaboration between the special and general educators for pre-planning and planning for curriculum adaptations. The individualized educational plan (IEP) is, of course, the roadmap to the student’s academic program and specifies the learning objectives, necessary adaptations, and resources needed by each student who uses AAC. In some cases, particularly in the upper grades, general education teachers may not participate in planning and may not even attend IEP meetings. These teachers may not be aware that they are expected to use language facilitation or other supportive strategies. Garnering their support is, of course, essential to academic success for the student who uses AAC.

Preparation for teaching the special needs student in general education includes both a pre-planning and a planning process. In the pre-planning stage, general educators are responsible for completing unit analyses in which they specify the objectives of the lessons, steps and activities, expected outputs (e.g., written/oral report, worksheet, essay), materials, and learning assessments (e.g., unit test, rubric). At this stage, special educators supporting students in inclusive settings are responsible for identifying the relevant IEP objectives, the domain areas that can be addressed in the lesson, and necessary adaptations. In the planning stage, special educators and general educators come together to establish consensus on which IEP objectives should be targeted within content area instruction, specific adaptations or accommodations needed, other necessary supports, and methods for assessing student learning (Henneberry, Kelso, Soto, 2012; Boruta & Bidstrup, 2012). Unfortunately, teacher education programs often fail to adequately prepare general and special education teachers for the support of students with disabilities, including those with AAC needs, in inclusive settings (Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007). Teacher training in assistive technology (AT) is often insufficient to meet the needs of students who use AAC (Alper & Raharinirina, 2006; White, Wepner, & Wetzal, 2003).

Special and general education teachers face many additional challenges in attempting to collaborate on behalf of the student. For example, they may not have a common planning time in their schedule or they may have different expectations about their respective roles and responsibilities (Jennings, 2007). Thus, the SLP may be attempting to support students who use AAC in the context of an educational environment that is not using effective inclusion practices. Nevertheless, the SLP’s effectiveness is dependent on classroom implementation and support. Making decisions about roles and responsibilities of each team member is an important part of effective AAC planning. Serene is a 17-year-old student with physical impairments who has used sophisticated speech generating devices (SGDs) since age 5. Table 1 provides an example of the ways in which Serene’s team members support her AAC learning and academic achievement. Charts like this can be useful to document the expectations for key members of the team.

Table 1: Sample chart to clarify expectations for AAC support for Serene, a 9<sup>th</sup> grade general education student who uses a high tech SGD (developed by IEP team, Serene, and her family)

ROLE	PREPARATION	LANGUAGE FACILITATION	COMMUNICATION
Student			<ul style="list-style-type: none"> <li>• Report difficulties and/or concerns to staff in a timely manner</li> <li>• Participate in brief weekly meetings with staff to address any AAC concerns</li> </ul>
SLP	<ul style="list-style-type: none"> <li>• Monitor device programming</li> <li>• Training for communication partners</li> </ul>	<ul style="list-style-type: none"> <li>• Design and implement curriculum-driven language/AAC therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Hold brief weekly meetings (10-15 minutes) with Serene, her paraprofessional, and inclusion support teacher to address any AAC concerns</li> </ul>
General education teachers	<ul style="list-style-type: none"> <li>• Provide access to lesson materials 5 schools in advance</li> <li>• Review lesson and consider how to address Serene’s goals within the scope of the class activities</li> <li>• Provide input on vocabulary and other language needs to SLP</li> <li>• Initiate planning for assessment in their content areas</li> </ul>	<ul style="list-style-type: none"> <li>• Create meaningful communication opportunities in all classroom activities</li> <li>• Implement language elicitation strategies as per the IEP (descriptive teaching, cloze technique, open-ended questions)</li> <li>• Pair Serene with supportive peers for group activities</li> <li>• Monitor administration of assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Report difficulties or concerns to SLP and/or inclusion teacher in a timely manner</li> </ul>
Para-professional	<ul style="list-style-type: none"> <li>• Device programming as directed by the SLP</li> <li>• Ensure that AAC system is set up and ready prior to each class</li> </ul>	<ul style="list-style-type: none"> <li>• Use quiet coaching when needed to help Serene participate in class activities</li> <li>• Use specific language facilitation strategies (e.g., least-to-most prompting)</li> </ul>	<ul style="list-style-type: none"> <li>• Report difficulties or concerns to SLP and/or inclusion teacher in a timely manner</li> <li>• Participate in brief weekly meetings with Serene, her SLP, and inclusion support teacher to</li> </ul>

		<ul style="list-style-type: none"> <li>• Subtly signal teacher when Serene is trying to respond</li> </ul>	address any AAC concerns
Inclusion support teacher	<ul style="list-style-type: none"> <li>• Model a positive attitude toward Serene’s inclusion in general education</li> <li>• Ensure that AT is functioning</li> <li>• Training on making materials accessible for the teachers and paraprofessional</li> <li>• Address difficulties or concerns reported by others</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor administration of assessments using Serene’s IEP-established Fair Testing Practices</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in brief weekly meetings with Serene, her paraprofessional, and SLP to address any AAC concerns</li> <li>• Communicate outcomes of weekly meetings to general education teachers</li> </ul>
Peer	<ul style="list-style-type: none"> <li>• Provide input on vocabulary and other social communication needs to SLP (with Serene’s permission)</li> <li>• Participate in training on language facilitation strategy with Serene and her SLP</li> </ul>	<ul style="list-style-type: none"> <li>• Support Serene’s efforts toward self-advocacy</li> <li>• Use language facilitation strategies</li> <li>• Include Serene in activities and conversations, when appropriate</li> </ul>	
Family	<ul style="list-style-type: none"> <li>• Report device problems to SLP</li> <li>• Maintain device at home</li> <li>• Monitor homework</li> </ul>		
Assistant Principal	<ul style="list-style-type: none"> <li>• Model a positive attitude toward Serene’s inclusion in general education</li> <li>• Become aware of the AAC expectations of staff</li> <li>• Support time for meetings and training (e.g., avoid scheduling conflicts, release from cafeteria duty)</li> </ul>	<ul style="list-style-type: none"> <li>• Incorporate AAC expectations into staff observations and evaluations</li> </ul>	

### Demands of the General Education Classroom

Professionals charged with facilitating the success of students with AAC needs must have a clear understanding of the communicative demands of classroom environments, which differ from communication at home or in other settings. One of the key differences is a stronger emphasis on evaluation. Much of the interaction that occurs in the classroom centers on demonstrating what the students know. Crago and her colleagues comment on the relationship between students’ competence in dealing with classroom communication patterns and learning opportunities.

*In order to function successfully in the classroom, students must know which rules underlying communication are in operation within a particular educational setting, lesson, or classroom participation structure. Knowledge of and competence with these frames of discourse and interaction provides access to learning. (Crago, et. al, 1997, p. 246)*

Students with AAC needs have educational experiences that differ within and across grade levels, educational models, and curricula. Despite this diversity, there are common factors that must be considered to maximize communication and learning each situation. Light (1997) suggests that key factors to consider include the physical context (the people, objects, and events) and the student’s access to it; the functional context (the structure and function of daily activities); the linguistic context (the actual language codes used in the community and in the student’s AAC system); the social context (interactions that facilitate or inhibit language development); and the cultural context (the values, expectations, and beliefs about language development and AAC). As illustrated in Table 2, each of these factors can serve to facilitate or limit the achievement and participation by all students, including those who use AAC.

Table 2: Impact of contextual factors on communication in the classroom

Factor	Possible Impact: Positive	Possible Impact: Negative
<b>PHYSICAL CONTEXT</b>		
Adults, peers, objects, events	<ul style="list-style-type: none"> <li>• S can independently navigate around the classroom</li> <li>• S seated with classmates (same height/level, close proximity)</li> <li>• S has appropriate tools &amp; materials that he/she uses to independently complete daily routines</li> </ul>	<ul style="list-style-type: none"> <li>• S is unable to efficiently move around the classroom with peers</li> <li>• S sits apart from, higher, or lower than peers, or faces in a different direction</li> <li>• S lacks appropriate tools to complete daily routines as independently as possible</li> <li>• Materials are not appropriately challenging</li> <li>• Materials lack adaptations that maximize learning &amp; participation</li> </ul>
<b>FUNCTIONAL CONTEXT</b>		
Structure and function of daily activities	<ul style="list-style-type: none"> <li>• S’s daily schedule &amp; routines are appropriately challenging</li> <li>• Tasks &amp; routines are structured for maximal learning, participation, &amp; independence</li> <li>• Adequate preparations are made for daily activities</li> <li>• Activities are implemented smoothly</li> </ul>	<ul style="list-style-type: none"> <li>• Daily schedule or routines expect too much or too little from S</li> <li>• Tasks or routines do not maximize learning, participation, &amp; independence</li> <li>• Preparation for learning activities is insufficient</li> <li>• Implementation of activities is awkward</li> </ul>
<b>LINGUISTIC CONTEXT</b>		
Language codes used in the classroom and community	<ul style="list-style-type: none"> <li>• S has strong comprehension in the languages used by adults &amp; peers</li> <li>• Supports for language learning are evident &amp; well-conceived</li> </ul>	<ul style="list-style-type: none"> <li>• S does not have good comprehension of the languages used in the classroom</li> <li>• Supports for language learning are inadequate</li> </ul>

	<ul style="list-style-type: none"> <li>• Many receptive &amp; expressive opportunities for written &amp; spoken language</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient opportunities for to develop expressive &amp; receptive skills in print &amp; face-to-face interaction</li> </ul>
Language codes used by the student with AAC needs	<ul style="list-style-type: none"> <li>• S's AAC system has a linguistic code which maximizes language learning &amp; performance</li> <li>• S observes others using the same linguistic code as is in his/her AAC system</li> </ul>	<ul style="list-style-type: none"> <li>• AAC system is not linguistically based</li> <li>• Linguistic code of the AAC system is not well-suited to the S's needs</li> <li>• Little or no opportunities to observe others using the same linguistic code as in the S's AAC system</li> </ul>
<b>SOCIAL CONTEXT</b>		
Interactions that facilitate or inhibit language development	<ul style="list-style-type: none"> <li>• Adults &amp; peers communicate with S respectfully</li> <li>• There are high expectations for language use</li> <li>• Frequent opportunities for interaction</li> <li>• Ample opportunities for S to initiate communicative exchanges</li> <li>• Adults &amp; peers consistently utilize good language facilitation techniques when interacting with S</li> </ul>	<ul style="list-style-type: none"> <li>• Adults or peers are dismissive, not age-appropriate, or disrespectful in their interaction with or about the S</li> <li>• Expectations for S's use of language are too low</li> <li>• Too few opportunities for interaction &amp; initiation</li> <li>• Adults or peers do not use appropriate language facilitation techniques well or consistently</li> </ul>
<b>CULTURAL CONTEXT</b>		
Values, expectations, and beliefs about language development & AAC	<ul style="list-style-type: none"> <li>• There are high expectations for achievement &amp; participation</li> <li>• Adults &amp; peers accept AAC &amp; believe it contributes to S's learning &amp; achievement</li> <li>• Adults &amp; peers value S as an integral member of the class</li> </ul>	<ul style="list-style-type: none"> <li>• Expectations for learning &amp; participation are too low</li> <li>• Adults or peers do not fully accept S's use of AAC &amp;/or do not believe that it maximizes growth or participation</li> <li>• Adults or peers do not fully value S as a central part of the class</li> </ul>

S = Student with AAC needs

### Managing Assessment Demands

A particular challenge that most general educators face in working with students who use AAC relates to assessment (Kent-Walsh & Light, 2003). For students who are not yet competent with their AAC systems, taking the myriad of quizzes and tests that are used to help educators understand what the student does and does not know requires careful planning on the part of the educational team. Other assessment measures, such as projects that require manual dexterity, homework assignments, and written products can prove just as challenging.

Clear guidelines are needed to help general educators make decisions about how to test these students. The IEP team should develop those guidelines and establish a set of Fair Testing Practices (FTP) specific to each student with AAC needs (for discussion of FTP, see Proctor & Zangari, 2009). Those practices should address the specifics of how the student should take the test. For example, if it is a multiple choice test, the student may be able to use an existing AAC device, manual communication board, or eye gaze board with the letter/number options to respond. If that is not possible, specific test-taking materials may need to be created (see Figure

A). It may also be helpful to teach the student to use partner assisted scanning, a strategy that is flexible enough to be used with a variety of test materials.

Figure A: Sample Test-Taking Boards

If these tools and strategies are used and are new to the student, it is important to teach them to the student and provide guided practice opportunities in advance of the actual assessment. The paraprofessional, educator, or SLP assisting the student during the assessment will also need training in order to properly implement these tools and strategies. Until a solid testing routine is in place, it is helpful to do some monitoring to be sure that the Fair Testing Practices are used appropriately.

A	B	C	D	E
True	False		Yes	No
1	2	3	4	5
I don't know.		That is not what I meant.	Slow down, please.	I have something to tell you but no way to say it.
Can you explain it to me?	Can you repeat that?	Can I see what you wrote?		Thank You.

### Supporting AAC Learning

Effective AAC use in the classroom can be facilitated by highlighting existing learning opportunities and developing new ones (Downing & Eichinger, 2003). Some SLPs use the IEP as a tool to support AAC implementation by writing goals that are explicit in how AAC should be used in classroom interactions. They develop goals that address critical language skills while being feasible in the classroom and tied to the curriculum. Noemi is a third grade student with autism and severe apraxia of speech who uses an iPad with an AAC app, a SGD, visual supports, signs, gestures, and word approximations. As can be seen from the examples below, her team elected to focus on classroom discussions as the context of many of her AAC and language goals, since that was particularly difficult for this student.

- When participating in classroom discussions, Noemi will gesture to get attention and use her SGD/iDevice to volunteer a response at least twice per class period.
- At least twice/day, Noemi will independently use pre-programmed messages in her SGD/iDevice to signal that she has a question.
- When provided with minimal prompts, Noemi will use signs, word approximations, and/or AAC devices to contribute at least once to each class discussion with 3-5 word sentences appropriate to the topic.
- With appropriate visual supports, Noemi will sequence familiar events in the context of daily class discussions.

Helping the general educator elicit these communicative behaviors is a collaborative effort by both the SLP and the special educator or inclusion facilitator. Listed below are some tips and strategies for encouraging appropriate AAC use in the general education classroom.

1. Accept that influencing the behavior of other adults is a process built on trust and developed over time. With some teachers you may make big strides quickly, but with

others, it may take awhile. Frequent, short interactions may be more effective than longer, inservice-type trainings. Consider using electronic media, within institutional policies, to share information, build knowledge, and foster relationships.

2. Model good interaction and language facilitation strategies. Point them out to the teachers and paraprofessionals at a time and place appropriate to the situation. Expect that the frequency with which teachers and paraprofessionals use these strategies will be proportionate to the SLP’s modeling of them. When Alina’s SLP supports her in the classroom, she uses aided language input in almost every interaction and encourages others to do the same. This makes it more likely that the paraprofessional will use this key instructional strategy when assisting Alina with her seatwork.
3. Conduct focused classroom observations to identify potential opportunities for targeting AAC objectives (See Table 3 for an example of a tool developed for this purpose: Classroom Observation for Communication Opportunities with AAC [COCOIA].) Examine regularly occurring activities and determine what subtle changes could be made to provide practice on new or emerging AAC skills.

Table 3: Classroom Observation for Communication Opportunities with AAC (COCOIA): Example for 9<sup>th</sup> grader who was observed in Personal Health class

Classroom Observation for Communication Opportunities with AAC (COCOIA)			
IEP Goal for AAC, Language, &/or Communication	Potential for Increased Opportunities		Suggested Improvements for Teacher (T) & Student (S)
	Whole Class or Large Group Activities	Small Group or Individual Activities	
Use prestored messages	Class discussion on body mass index (BMI)		T: Ask agree/disagree questions S: “I agree with that.” “I don’t think that’s true.”
Use communication repair strategies		Group work to calculate BMI	S: “Can you explain that some more?” “That’s not what I meant.”
Use subordinating conjunctions (e.g., unless, because, since, until, while)	Class discussion on body mass index (BMI)		T: Ask causal questions S: Respond using sentences with ‘because’
Increase academic vocabulary	Class discussion on body mass index (BMI)	Group work to calculate BMI	S: Use at least 3 Tier 2 words (e.g., measure, demonstrate, calculate)

4. Provide specific but simple suggestions for the teacher for what to do and/or say (e.g., “At Writer’s Workshop meetings, ask Alina “what can you tell me about” questions. Take her single word responses and link them together in a sentence. For example, if she says *money*,



*keep*, and *building*, you can respond with “Yes, a bank is a building where people keep their money.”

5. Prioritize your suggestions based on a) what will give the student the most powerful learning gains, and b) what changes the teacher is able and willing to make in order to build confidence and success over time.
6. Focus on one change at a time. Consider key intervention strategies that will impact the student’s AAC learning and select one to address with your colleagues. Concentrate on helping the teachers and paraprofessionals gain competence with that strategy before introducing new ones.
7. Use the language of teaching and learning familiar to your team. For example, Alina’s school uses the STAR method of teaching reading vocabulary (S [SELECT words essential to comprehension], T [TEACH words that are key to comprehension], A [ACTIVATE knowledge through experience], R [REVISIT key words frequently]). When making suggestions about providing more communication opportunities, the SLP uses the familiar STAR acronym to help the teacher find ways for Alina to *revisit* the use of descriptors, one of the language goals in her IEP. This makes the suggested improvement seem more feasible, since the general principle is one already in place in the classroom.
8. Use the curriculum and existing classroom activities as the focus for therapy whether or not the SLP services are provided in or out of the classroom.
9. Build in a system of gentle accountability paired with encouragement and support. Most of us are more likely to do something when we know that someone will be checking up on us. Ask how things are going with XYZ strategy or ABC goal and return to monitor if things are not proceeding according to plan. A regular pattern of follow-through helps to establish the expectation for AAC implementation.

## Conclusion

As communicators, students who use AAC are often still developing linguistic, operational, and social competence with their AAC systems and struggle to do this while learning academic content. With appropriate supports, general education teachers and SLPs can work together to ensure that these students achieve their linguistic and academic potential.

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