AAC and RTI: Building Classroom-Based Strategies for Every Child in the Classroom

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ABSTRACT

Educators were previously encouraged to use IQ-achievement discrepancy to identify children with learning disabilities. The Individuals with Disabilities Education Improvement Act promotes an alternative method, response to intervention, or RTI, not only to identify these children but also to provide early intervention to all children at risk for school failure. Children with complex communication needs who use augmentative and alternative communication (AAC) are at risk for failure in the classroom and can benefit from the educational supports provided through RTI. This article discusses the levels of support provided by RTI, the speech-language pathologist's role in RTI, and strategies and supports for achieving academic success for children who use AAC.

KEYWORDS: Response to intervention (RTI), classroom intervention, peer interactions, teacher collaboration, classroom strategies

Learning Outcomes: As a result of this activity, the reader will be able to (1) describe the three tiers of response to intervention (RTI), (2) identify the roles of a speech-language pathologist in relationship to RTI and the use of augmentative and alternative communication (AAC) in the classroom, and (3) discuss strategies to support children who use AAC systems through RTI.

Reading, writing, listening, and speaking are infused into almost every aspect of the educational experience; therefore, children with speech and language disorders can be expected to have more difficulty learning in the classroom. Children with complex communication needs

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who rely on augmentative and alternative communication (AAC) will have additional challenges accessing the educational curriculum. The response to intervention (RTI) model, designed to provide early identification of student needs, as well as identify the supports needed for academic achievement, can be used to determine effective services for any student having difficulty in the classroom. Because our goal as speech-language pathologists and teachers is to actively engage students in the classroom curriculum to move toward academic success, this article will address how students using AAC can benefit from the levels of RTI support and service provisions.

WHAT IS RESPONSE TO INTERVENTION?

RTI, suggested as an approach under Individuals with Disabilities Education Improvement Act (IDEA) of 2004,[1] is one avenue through which all students can benefit. The concept of RTI was included in the recent federal law due in part to the traditional special education identification model, where students tend to fail before receiving services.[2] A RTI model is a three-tiered intervention approach that begins at tier 1: screening, monitoring, and identifying individual students struggling in the classroom. As general classroom instruction, incorporated with sound instructional design principles, are used in the classroom, these struggling students are first monitored for their responsiveness to the classroom instruction and then assessed to determine areas of risk. Students may be identified as at-risk for academic failure yet may not meet the eligibility requirements to qualify for special education services. Through RTI, they will be provided support through structured intervention. The nature of the academic intervention changes at each tier, becoming more intensive as a student moves across the tiers.[3] The hallmark of the RTI approach is to use high-quality instruction and evidence-based intervention and to monitor and maintain data on the individual student's progress.[4] Data collected will determine if the intervention needs to be (1) more or less intensive; (2) teacher-centered, systematic, and explicit instruction; (3) conducted more or less frequently; (4) conducted for a shorter or longer duration; (5) delivered in small, homogeneous student groupings; and/or (6) reliant on instructors/professionals with greater expertise.[5]

RTI MODEL TIERS

Tier 1 services are delivered in the classroom, initially by screening the students to determine who is at risk for not developing requisite skills at an acceptable rate. The instructional team is charged with improving the instructional environments prior to further referral of the student not only to improve the overall quality of the classroom but also to rule out whether a lack of instruction is instrumental in producing the student's deficiency.[6] Once a student is identified as being at-risk, the student is provided with tier 2 instructional intervention with continued monitoring for progress, with more thorough screenings implemented at a suggested rate of a minimum of 3 times per year.[7] It is important to note that tier 2 interventions are curriculum-based; therefore, the data collected is monitoring their success with the curriculum.

Students using AAC will generally qualify for intervention support at both tier 2 and tier 3. Tier 2 supports are typically provided in the classroom with the speech-language pathologist collaboratively problem solving with the classroom teacher to design a supplementary, diagnostic instructional trial tailored to the needs of the student.[3] At this level, the classroom teacher can also receive additional support ranging from professional development to support from other educational professionals to provide intervention and/or monitor progress. As Tier 2 interventions are set up in the classroom, a primary consideration for students using AAC is to define the response modes (i.e., vocalizations, verbalizations/approximations, pointing to pictures/words/letters, gestures/sign language, speech-generating device/computer) needed for each educational task. Efficiency and effectiveness are important considerations when defining the mode used for each task. For example, will they use vocalizations/verbal approximations to respond to yes/no questions, point to a low-technology communication board with words/pictures to answer multiple-choice

questions, and use a speech-generating device/computer to answer open-ended questions? An intervention plan should define the most efficient and effective response mode for each task as many students using AAC do not exclusively use one mode and may change modes based on the task and the required outcome. The speech-language pathologist and teacher should work collaboratively on this plan, breaking down the tasks for each subject area to maximize the participation of the student using AAC.

The student's progress is monitored and data are collected to determine if the student has benefited from the intervention or if the student needs additional support. If the student has benefited from tier 2 intervention, the student continues to receive the diagnostic intervention. If it is determined from the monitoring that the student does not effectively respond to the intervention in tier 2, then the parents are notified that their student needs additional supports. These additional supports are provided in tier 3.[8]

Tier 3 begins with a comprehensive evaluation to determine the eligibility and academic supports the individual student needs. The assessment may identify any level of discrepancy between academic and intellectual ability to diagnose a student with a disability under IDEA.[4,8] At this level, speech-language pathologists (SLPs) can provide support in using evidence-based practices in the classroom, in assessing students, and emphasizing the link between language, literacy, and learning within the classroom. These supports can be accomplished through program design, collaboration, and intervention with individual students.[4] Successful interventions and supports at the tier 3 level then need to move back to integration in the classroom setting at a tier 2 level whenever possible.

SLP ROLES IN RTI

SLPs have an increasing role in school-based practice. It is important for SLPs to become familiar with their district's RTI approach, as the components of a RTI model can vary from district to district. It is also imperative that SLPs become familiar with the classroom curriculum, as the basis for movement through the tiers of RTI are based on the response to the needs of the student in relationship to the curriculum. This familiarity with the curriculum is especially important when addressing the needs of students who use AAC. It will not only dictate vocabulary needs but also the expected level of response during curriculum-based activities.

SLPs can take a leadership role in RTI in our school districts. We can offer suggestions for design of RTI programs to be used within the school district. These suggestions can include and are not limited to (a) the link between the classroom curriculum, and language and literacy for all students including those using AAC; (b) the selection of screening tools to use in tiers 1 and 2, determining the appropriate communication modes needed for a student using AAC to demonstrate proficiency; (c) the provision of professional development of staff personnel regarding language, literacy, and AAC; and (d) the selection of evidenced-based literacy instruction for all students in the classroom, especially for students with receptive and expressive language disorders.[4]

Collaboration with classroom teachers setting up AAC-based interventions can benefit every student in the classroom, as many students are also visual learners and may benefit from the symbol-based support for instruction. SLPs can and should advocate for more time to support teachers in their classrooms, especially when they have students with AAC needs. Collaborative efforts can include but are not limited to (a) assisting with tier 1 screenings, (b) assisting with at-risk students in tier 2 by being a resource and assisting in the development of interventions, focusing on the language and literacy skills related to the classroom curriculum, and (c) assisting with progress monitoring data interpretation.[4]

SLPs continue to provide services to those students who meet eligibility requirements under RTI. In addition, SLPs can assist with the development of the referral process for eligibility determination. Under RTI, SLPs retain the roles of using best practices regarding assessment of individual students for eligibility determination and of determining the type of intervention for those students who qualify for

special education services for communication disorders. The SLP's knowledge of evidenced-based practices regarding the language and literacy underpinnings related to the classroom curriculum can be used in any tier of RTI.[4] This role is of particular importance to those individuals using an AAC system. The potential of collaborative efforts with the classroom teacher and SLP is limitless within the classroom curriculum, especially for individuals using an AAC system, from modeling interactions, training instructional aides and peers, advocating for increased opportunities to respond and participate, to team teaching the curriculum.

The SLP reading this article may be asking, "When am I going to have the time to go into each classroom *and* serve all the students on my caseload?" This question is valid. However, to answer this question, one would need to look at the RTI tiers and observe that a shift is occurring in how all students, in particular at-risk students, are served in the classroom. Time is used in a different manner with RTI.[4] Rather than being assigned the entire day to the therapy room, SLPs can spend more time in the classroom to meet the needs of all children. Consultation and collaboration play a more important role in RTI. "The point of RTI, however, is not to add more tasks but to reallocate time to better address prevention and early intervention, and in the long run serve more students up front rather than at the point of special education evaluation and service."[4] Furthermore, students who are eligible for special educational services, including communication disorders, can still receive traditional SLP services if that determination is made by the team.[4]

BEST PRACTICES FOR CLASSROOM INTERVENTION USING RTI

A language-rich classroom helps teachers to support children's engagement in the curriculum. The classroom environment is the most natural setting to integrate language intervention and can be planned in such a way that allows the teacher to target specific language throughout the classroom. Justice elaborated on five basic principles for creating language-rich interactions, which addresses best practice for a tier 1 environment for learning: (1) Language is experienced in various contexts and with frequent opportunity. (2) Language is intentionally used surrounding the children's activities to expose the children to new skills. (3) Language is repeatedly used so that children engage in many opportunities to use their language skills. (4) Language in the classroom involves many different words and word types (e.g., nouns, adjectives); is combined in many different ways, such as in declarative sentences or wh-questions; and is implemented in a variety of situations and classroom activities. (5) Additionally, language is used to recognize and validate children's communicative attempts.[9]

Children who use AAC typically have minimal control over the acquisition of new vocabulary and are reliant on the SLP and teacher to provide not only curriculum- based vocabulary but also developmental vocabulary to allow students to participate in the language-enriched environment proposed by Justice.[9] Frequently, they have access to vocabularies that are insufficient to meet their communication needs. Their AAC systems rarely provide them with more than a few hundred concepts, and most users have access to significantly fewer than that.[10] The extent to which these children can effectively participate in interactions is largely dictated by the appropriateness of the vocabulary available to them.[10,11] The general education classroom environment places unique demands on school-aged children as they move through lessons that involve a range of topics (e.g., from classroom discussions on life cycles, math strategies, creative writing techniques, or history) and have specific rules for participating in each type of lesson structure (e.g., direct instruction, teacher directed, small or large group discussion, cooperative learning groups, or partner work).[12] In all classrooms, language is the medium for reading, writing, and communicating. To be successful, children need language skills that support them in sharing what they know in appropriate forms. When children are engaged in literacy learning, they are actively involved in a lot of "talk," and the language needed depends heavily on the task and the rules for participating.[13]

Because ~70 to 90% of individuals who use AAC have already been identified as reading and writing at levels significantly below their same-age peers without disabilities,[14] literacy instruction may also need to be addressed using RTI models of support. Creating curriculum-based communication boards, either low-tech or electronic/speech-generating, can be a tier 2 intervention that will allow students using AAC access to the curriculum. They can be used in a variety of ways from a basic choice board that would allow the child to select the book that she wants to read to boards/overlays with extended vocabulary sets of nouns, verbs, adjectives, objects, and morphologic markers that will allow the child to generate novel, syntactically correct multiword utterances. The speech pathologist would consult with the classroom teacher to determine what vocabulary should be used and how it will be represented graphically using digital images, symbols, and/or orthographically through spelling.

Once vocabulary needs are determined during tier 2 collaboration, the organization of the communication pages needs to be determined whether the child is using a low-tech picture board or a sophisticated speech-generating device. Time needs to be spent on developing a template prior to creating the first communication board so that the location of vocabulary on each board will be as predictable as possible; thus, the child does not have to search randomly each time a new board/overlay is accessed. Single-word vocabulary and messages should always be sequenced left to right and top to bottom, whenever possible, so the child follows the natural pattern for reading. When visually scanning any new symbol page/overlay, the child should be encouraged to look for the symbol/word by following the left/right/top/bottom pattern. Many vocabulary sets follow the left to right progression of question words, people/pronouns, verbs, prepositions, adverbs, adjectives, and object words and may also be color-coded syntactically to assist with quick categorical recognition of vocabulary.[11]

Any message, command, or word that appears on all overlays should be placed in the same location on each communication board/overlay, and then new vocabulary can be added into the other available locations. Vocabulary should never be moved around on a board to "test" a child. Just as we have learned to rely on our computer keyboards to have the letters in the same location each time we access them to type, so should vocabulary be kept in the same locations; thus, the child will begin to build automaticity and speed when accessing his communication system for speaking, reading, and writing tasks. It is more important to err on the side of giving a student more vocabulary and modeling its use than giving a student less vocabulary and waiting for him or her to "master" it before adding additional words. "Mastery" should not be determined by having the child "find" the symbol or word on the page when directed but by actually using it appropriately in context.

At tier 2, our ultimate goal is for the student to understand and have access to the vocabulary needed for all levels of participation, but at any point in time, the teacher may need to adjust how questions are asked and information gathered based on the vocabulary available and understood by the student. Questions that require short-answer or single-word responses are appropriate with topic-specific vocabulary. Questions formatted with a multiple-choice response can allow the child to answer using "a," "b," or "c" on their system without having to have curriculum-specific vocabulary added that may not be used again outside of this unit of study (e.g., Which is the larval form of a butterfly? a. egg, b. caterpillar, c. cocoon). Although yes/no questions do not allow the child to expand, they may also be used if there are no other ways to assess a student's knowledge. Preteaching of curriculum-based vocabulary may be needed to ensure the student understands the vocabulary and can use it appropriately prior to the unit's introduction. Although preteaching can occur as a pull-out activity at tier 2 or 3, it can be most effective for all learners when taught in an inclusive classroom setting.[15]

In tier 2, expressive language expectations should be based on a thorough analysis of the student's receptive language and cognitive levels of development, before setting up vocabulary systems. The SLP and teacher should work together closely when choosing

vocabulary to ensure it meets not only the linguistic needs of the student but also provides access to the curriculum. It is also important to take into consideration the social/pragmatic needs of the classroom environment. Classroom communication involves more than just requesting. Students must be able to share stories, ask clarifying questions, participate in discussions, and demonstrate understanding of key topics. The student's vocabulary options should allow him to communicate in each of these ways to the fullest extent possible.

Any of the interventions discussed above can be delivered at the more intense tier 3 with more intense instruction (direct teaching) to build the student's linguistic competencies and then moved back to a tier 2 classroom intervention once established, with continued monitoring in the classroom.

LITERACY LEARNING IN RELATION TO RTI

Literacy learning is a key academic area addressed through RTI intervention. Research has demonstrated that AAC strategies support literacy learning in children with special needs.[16–18] According to Fallon and her colleagues,[18] three areas need to be addressed: appropriate instructional content, appropriate instructional procedures, and making adaptations to allow active participation of individuals who cannot produce spoken responses. These areas are aligned with the tier 2 expectations of RTI.

Instructional content and procedures should model those of our typically developing students with an *expectation* that these children will move from emergent readers and writers to fluent readers and writers. As with typically developing students, we need to read interesting texts to students, talk about the stories, and relate them to the students' experiences. Active participation needs to be encouraged, comprehension needs to be built, and repeated readings need to be provided to build competence. To support literacy development, we need to build language skills, both semantic and syntactic knowledge, as well as phonologic awareness skills (including phoneme segmentation and sound blending), letter-sound correspondences, early reading and decoding skills, and early writing skills (i.e., dictating/telling stories, writing stories, invented spelling).

For all students, principles of effective instruction, such as in tier 2, should guide us to use meaningful materials and to provide direct, explicit instruction in basic skills (i.e., model the skills; prompt the student and provide guided practice; check the student's performance). Scaffolding should be provided as support initially for oral production/rehearsal for the student and then gradually faded. Repeated opportunities are needed for students to practice, ensuring their active involvement and incorporating their new skills into meaningful literacy experiences.

It is important to move the student sequentially through literacy instruction, beginning with the development of phonologic awareness skills and letter-sound correspondences.[18] Users of AAC often are considered at risk for delays in the area of phonology and experience difficulty learning to read, spell, and write as a result of decreased phonologic awareness skills.[11] Because the student may not be able to produce speech or her production is deviant, it will be difficult to practice phonologic awareness tasks such as segmenting sounds of words, blending individual sounds to form words, and rhyming. One simple modification of most literacy curriculum materials can be made by voicing for the student each of her choices. This modification can be made in tiers 2 or 3. The teacher should allow the student to attempt to vocalize/verbalize if at all possible to actively engage the student with learning. Using the keyboard page on a synthesized speech-generating device or a computer with text-to-speech software, the student can be given opportunities to experience segmenting, blending, and rhyming.

Writing is the one area of literacy that should not be forgotten when planning tier 2 or tier 3 intervention. Writing instruction should also follow the above progression beginning with instruction in specific skills such as phoneme segmentation and letter-sound correspondences.[19] The child requiring AAC should use his AAC system or a computer (with adapted keyboard if needed) to access letters and sounds in meaningful writing activities.[19]

Opportunities need to be provided to engage students in meaningful writing activities, both in tier 2 during classroom activities and in tier 3, where the instruction may be more explicit focusing on the expressive language skills of the student using AAC in alignment with their Individualized Education Plan goals. These could include dictating/telling stories, patterned story telling (rewriting a familiar story such as *If You Give a Mouse a Cookie*[20] with new characters or scenarios), or writing using a familiar story, expanding the story line.[21]

Children need time for independent practicing of both reading and writing at tier 2, within the general classroom activities, and in tier 3 with the support of the SLP. Books you share with students will be most effective if the materials are available for them to further explore, because students will naturally want to practice what was presented to assimilate any new information.

PEER INTERACTIONS AND SUPPORT IN THE CLASSROOM

All typical peers can support diverse learners including those children who use AAC. These students can be the models and extension of the classroom teacher and SLP during the interactions with the classroom curriculum. The teacher's knowledge of the language facilitation could be supported through collaboration with the SLP. The benefits of RTI can be layered to provide benefit not only to the individual student who uses the AAC system in the classroom but also to the other students in the classroom through the teacher's facilitation of language during a literacy event. All students can benefit from a broader understanding of both spoken and written language use, whether a typical student or a user of AAC.

Typical peers, if used in this manner, would need training because successful interaction with individuals using AAC is dependent on a range of factors including the communicative knowledge, skills, and attitudes of the partners of users of AAC.[22,23] Goals for peer training should be individualized based on the age of the peer and communication difficulties identified by the teacher and SLP. Because children with significant disabilities tend to be passive listeners and do not ask questions, initiate topics, or elaborate on a story during shared story reading,[24] peer training goals could focus on turn-taking, listening, and maintaining conversation[25] during shared book reading activities. For example, during book reading, the student who uses the AAC system/device can be partnered with a typical peer. The typical peer can encourage the student who uses the AAC system to be engaged in the book reading. Also, the teacher can facilitate the language surrounding the specific literacy skills targeted during the book reading activity.

General communication training for all communication partners including peers, teachers, and aides should address several basic principles around attention, waiting, and prompting.[22] First, partners need to allow for a slower pace of interaction. Once a question is asked or a comment made, wait/pause time is needed until the student using AAC finishes constructing their message before asking another question or initiating another comment. It takes significantly longer to construct a message using an AAC system than it does to speak that message. Communication partners need to have at least a basic competence in the alternative form of communication.[26] During training, it may be helpful to have the communication partner actually use a communication board or device to increase his understanding of the experience of what it takes to find the vocabulary to ask or answer a question or share a story. It is also important for the communication partner to learn to accept a combination of communication modes, not just the AAC system. The communication partner should allow the student to vocalize, gesture, and sign parts of their message if understood by the communication partner to respond in the quickest, most efficient way possible. Interacting at eye level allows the communication partner to pay attention to facial expressions and gestures that the student may be using in addition to their communication system to convey meaning. Communication partners need to be honest and request clarification if they do not understand the student's message.

Typical children hear more than 100 words per day or 30,000 words before they speak

their first word. An individual who uses AAC should not be expected to have comparable expressive language production using his speech-generating device or low-tech communication board unless he has had that usage modeled as frequently. We cannot expect students to "naturally" know what to do without demonstration. Aided language stimulation modeling is a technique that encourages partners to model the use of a child's AAC system[27–30] to facilitate both symbol comprehension and production. Using this technique, teachers and peers of children using AAC systems (low-tech or speech-generating) would touch the graphic symbol as they spoke the word, teaching both vocabulary location as well as socially/pragmatically when to use it. If used naturally during conversation, this technique could facilitate/teach when to ask questions, initiate comments, and/or expand on the topic.

CONCLUSION

RTI, when used appropriately, can provide support for all students in the classroom struggling to meet curriculum goals. Students with complex communication needs using AAC systems will especially benefit from the curriculum-based support offered through RTI. Collaboration between the SLP and the classroom teacher is essential in supporting all students across the RTI tiers. The goal of delivering more support services in the classroom setting allows other professionals and peers to participate in service delivery to maximize opportunities for learning for students using AAC. The time needed for planning, collaborating, and implementing surrounding RTI can be a positive change for everyone involved in the classroom. Remember that our primary goal for all students, including those using AAC, is to become fluent speakers, readers, and writers and to participate maximally in their education. The principles of RTI facilitate this process.

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