AAC IN THE
SCHOOLS
BEST PRACTICES FOR INTERVENTION

Nancy B. Robinson • **Gloria Soto**
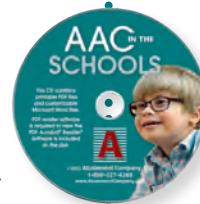
AAC in the Schools
Best Practices for Intervention

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About the authors

Dr. Robinson is a professor at San Francisco State University, a speech-language pathologist (SLP), and a special educator with a focus on early childhood education. She completed her master's degree in speech and hearing sciences at Portland State University in 1975 and her PhD in special education at the University of Washington in 1987. For many years, she worked at the University of Hawaii with the Center on Disability Studies with a team of faculty and students in health, education, and social science who developed interdisciplinary education models to support individuals with disabilities and their families. In 1998 Dr. Robinson joined the California State University system, first at Chico State University and then at San Francisco State University, where she has developed AAC programs for students with communicative disorders. Recently, Dr. Robinson co-authored a book with Dr. Kathleen Sadao titled *Assistive Technology for Young Children*. Dr. Robinson and Dr. Gloria Soto have co-directed two personnel preparation grants funded by the U.S. Department of Education/Office of Special Education Programs. These grants, "Collaborative AAC Services in Inclusive Early Intervention Settings" and "Collaborating for Language, Literacy and Augmentative Systems in Schools" (Project CLLASS), were designed to prepare SLPs and special educators with specialization in AAC. Much of what was learned through working with their students led to the development of this book.

Dr. Soto is a professor in the Department of Special Education at San Francisco State University. Her area of professional expertise is multimodal augmentative and alternative communication (AAC) for children who have little or no functional speech. Dr. Soto's areas of research interest include applied educational issues such as supporting access to general curriculum for students with AAC needs, as well as more basic areas such as language development through augmented means, development of narrative language in AAC, and the impact of graphic symbol use on language development. Of particular interest to Dr. Soto are multicultural issues in AAC.

Her recent research has focused on the assessment and intervention of narrative skills in children who use AAC, most specifically strategies to facilitate the development of personal event narratives. She is currently the principle investigator of a National Institute of Health grant to investigate the effects of conversation-based intervention on the expressive vocabulary and grammar skills of children with severe motor speech disorders and the co-director of a grant to recruit and train professionals and graduate students in AAC. She is a frequent speaker at national and international conferences related to communication intervention and special education. Dr. Soto recently edited a book focusing on curriculum modifications and adaptations for AAC users. She has published numerous articles and book chapters.

Introduction

*t*he role of the speech-language pathologist (SLP) in school environments is influenced by educational policies and practices that affect all educators and their students. While the students served by SLPs in school settings are most often eligible for special education services under the 2004 Individuals with Disabilities Education Act (IDEA), these same students are part of the general education curriculum some or all of the school day. The focus on access to general education for all students, particularly for students with disabilities, leads to determining the most effective methods for engaging students with disabilities in the general education curriculum.

For students who use Augmentative and Alternative Communication (AAC) systems to participate with their peers in the general education classroom, thoughtful design of the learning environment and curriculum adaptations may be needed. As more states adopt the Common Core Standards, special instruction for students with disabilities needs to be aligned with grade level standards for all learners. Special educators are often called on to adapt materials to meet the learning needs of individual students with language and learning disabilities. However, rather than individualizing education to meet the needs of students with disabilities on a case-by-case basis, the implementation of Common Core Standards in schools shifts the focus to meeting grade-level outcomes for all students. Special educators, including SLPs, are now required to engage in backward planning, referencing Common Core Standards for learning goals and designing activities for students with disabilities that include the same content and that support the same achievement as that required for all other students.

This book is designed to provide tools for the SLP to serve students and assist the educational team, including teachers and other related service personnel, in the context of the general education curriculum and the Common Core as the content for intervention. Through knowledge and application of the Common Core Standards, SLPs play a critical role in creating a school environment that extends policy and practice for access to education to all aspects of the school day for students who use AAC. As Calculator (2009) stated, the school curriculum "includes not only the various subject areas of math, science, music and art but also the varied and intricate methods and styles of communication through which all students navigate their way through a typical school day, in and out of the classroom."

Using the Common Core Standards as the framework, a comprehensive set of resources and strategies are provided in the following chapters for the SLP to systematically understand and overcome many of the barriers students face in mastering the skills needed to learn in all subject areas and social settings. Chapter One examines policy and school initiatives that impact the SLP, the team, and the students who use AAC. In the chapters that follow, steps for supporting students in accessing and mastering the general education curriculum are presented. The second chapter describes assessment processes for identifying the curriculum-based strengths and needs of individual students who use AAC systems to participate in classroom curriculum content. Chapter Three provides a method to interpret assessment results and to set goals in the context of curriculum based on the Common Core Standards. Chapter Four references language development milestones as the foundation for intervention to address gaps in language development that students using AAC systems may experience. Chapter Five links the language underpinnings to literacy development through the use of teaching strategies with students using AAC aids and devices. Considerations for family involvement, including families with diverse language and cultural backgrounds, are described in Chapter Six. The final chapter discusses the expansion of the professional role of the SLP to support access to all school environments for students who use AAC. Key tools presented in the chapters are duplicated in the Appendix for your convenience.

Fitting into school

*For the student who
uses augmentative and
alternative communication*

*j*uan arrives at school each day, eager to see his friends and teachers. As he gets off the school bus, he grins at his teacher, who comes to meet him at the curb. He reaches out to wave to his friends, who are arriving at the school doors. As he makes his way to his classroom, he greets many more students in the hallway with enthusiastic smiles and hellos. Each person he greets responds in kind to Juan; he appears to beam his way to class with warm greetings lining his pathway. Gradually, Juan's school chums enter their respective classrooms, and the hallway becomes quiet. At the end of the hall, Juan enters the special education class, which is his main classroom until he returns to join his friends in the regular second-grade class for social studies and language arts, following his individual literacy and computer work in the special education classroom.

In the example above, Juan attends a regular elementary school and participates in the general education curriculum for part of his school day. He is a second-grade student who uses an Augmentative and Alternative Communication (AAC) system that includes unaided and aided communication with low-tech communication boards and a high-tech speech-generating device (SGD). Although Juan's parents and teachers aim to have him included in the regular second grade full time, he faces many barriers.

The types of barriers that confront Juan can be characterized as both intrinsic (within the individual) and extrinsic (external to the individual). Beukelman and Mirenda (2005) further described barriers for participation as those related to individual capacity, environment, opportunity, knowledge, attitude, and policy. For Juan and other students who rely on AAC as their primary modality for learning and communicating, these barriers are real and constant. Each type of barrier listed above is based on assumptions, often inaccurate and

not fully understood. For example, his teachers may assume incorrectly that Juan does not comprehend the concepts needed for the second-grade reading circle. In his classroom are physical obstacles that create barriers to using his SGD effectively. Although policy in Juan's school supports inclusion and access to the general education curriculum, he participates minimally in the regular education curriculum and setting. Through demonstration and facilitation by the educational team, particularly the speech-language pathologist (SLP), it may be possible to overcome the above barriers. In this chapter, policy and practice that impact the SLP, the team, and students who use AAC are examined.

Changing school culture

Federally and state-mandated changes to public school policies and programs can also affect students with disabilities. In particular, students with significant disabilities who rely on AAC for communication and learning are vulnerable to the impact of school policies on their educational programs. The current emphasis on standardized testing, the core curriculum, and educational reform raises concerns about how to include students with disabilities to take part and to achieve learning outcomes with their peers who do not experience disabilities.

Widespread initiatives to boost student learning also affect school personnel and require service delivery models that can support students in special education programs. Trends in schools that include educational reform, access to general education for students with disabilities, response to intervention (RTI), universal design for learning (UDL), and differentiated instruction are discussed in this chapter.

Including students with disabilities in educational reform

Emphasis on achievement for all students is the heart of school reform. Legislation and policy that affect education for all students is found in the No Child Left Behind (NCLB) act, recent revisions and regulations of the Individuals with Disabilities Education Act (IDEA), and policy guidelines by the National Reading Panel (NRP), to name a few. Inherent in the NCLB legislation and related policy is standards-based assessment. The focus on assessment in schools is controversial, yet the need to be accountable for educational outcomes for all learners permeates educational reform. The need to evaluate outcomes for schools, teachers, and students is well established and appears in many forms throughout general and special education. Although the emphasis on achievement and student learning outcomes is pervasive, special educators are often reported to be reluctant to implement standards-based assessment with their students with disabilities (Parrish & Stodden, 2009). The unfortunate result is that students with disabilities may be left out of educational reform. Teachers who are reluctant to evaluate their students with significant disabilities reflect low expectations for these students and may unwittingly limit their efforts to teach the same curriculum that students who are not disabled experience. Parrish and Stodden argued that including students in standards-based assessment is a means of including students who have disabilities with all learners, thus focusing on the student first and the disability second.

Practices to include all students in general education

Including students with disabilities in achievement measures for all students is a worthy goal and one that is difficult to achieve. McLeskey and Waldron (2011) conducted a comprehensive review of the research, evaluating the effectiveness of inclusion for students with learning disabilities over the last two decades. Their findings are thought provoking and clarify that the location of educational services is not the determining factor in promoting student outcomes. They examined the general education classroom and the special education classroom environment for elementary-age students with

Inclusion across the school day.

Rather, they argued that effective inclusive education may not fully occur in a general education classroom but may require part-time special education settings where specialized instruction is provided. They further recommended comprehensive changes in school implementation of inclusive education to include greater collaboration between special education and general education teachers. Particularly important are the teacher's skills in adapting the curriculum in response to students' learning needs, decoding materials, and promoting meaningful learning and evaluation for all students.

learning disabilities, finding the quality of education to be more of a determining variable in the learning outcomes of students than classroom placement. In other words, students who were able to master curriculum on level with their peers without disabilities received high-quality instruction, often in special education resource rooms. These authors identified characteristics of high-quality education as follows:

◗ Instruction is provided in small groups of no more than three students.

◗ Skills and concepts that match individual student needs are clearly defined.

◗ Increasing levels of difficulty are provided in sequential fashion to allow student mastery.

◗ Students have opportunities for independent and supervised practice.

◗ Regular progress monitoring and feedback to students are conducted to ensure progress.

McLeskey and Waldron further examined the implementation of high-quality instruction for students with disabilities in both general education and special education resource rooms, finding limited implementation in both settings. From their results, these authors concluded that inclusion is not defined by the place where instruction occurs.

The implications of these findings for the SLP are significant and help to define positive practices supported by research. In other words, the location of the SLP services to students with disabilities is not as critical as the quality of those services. Using the guidelines defined by McLeskey and Waldron (2011), listed above, the SLP may decide to provide services in the classroom or other settings, including students in small groups, with opportunities for sequential and repeated practice, and progress monitoring.

In a related study, Lenz, Ehren, and Dashier (2005) identified the challenges that confront teachers of adolescents with disabilities to meet the demands for teaching content with increasingly complex vocabulary in a meaningful way. The varied literacy skills of individual students also require that teachers address learning gaps that students present in relation to the curriculum content standards they are required to teach. Lenz et al. identified strategies to focus on basic literacy skills as a means to equal the playing field for all students, with attention to literacy development at multiple levels in the curriculum. The SLP can also support literacy skills in a therapeutic context through collaboration with teachers and focus on underlying language skills to support literacy. More extensive discussion of specific strategies is included in Chapters 3, 4, and 5.

Access to general education

Legislation mandates require that all students take part in the general education curriculum and meet the same curriculum standards. For students who learn differently, different teaching methods and student skills to demonstrate mastery are needed. Agran, Cavin, Weymeyer, and Palmer (2006) argued that if students are to meet the same curriculum standards, the same curriculum content is needed for all learners. General agreement is found among policymakers and researchers that the content of the curriculum should not vary when instruction is adapted for students with disabilities. The content of the curriculum should remain constant while the teaching methods and student learning vary.

Student setting goals with SLP.

Unfortunately, methods for adapting the curriculum to create accessible content for all students are not well defined in the literature because most studies focused on access to the general education curriculum are based on social inclusion rather than academic inclusion. Parrish and Stodden (2009) suggested providing choices to students in adapting and augmenting curriculum in relation to standards in three phases:

1 **Goal Setting:** What is my goal? (choosing from a limited set of curriculum areas)

2 **Planning:** What is my plan?

3 **Evaluation:** What have I learned?

In a single-subject design with three students, the authors found that students' motivation increased with positive mastery of curriculum. Positive outcomes were measured in terms of the percentages of objectives each student achieved, and these were uniformly near 100% for all three subjects. While the generalizability of their findings is limited due to the small number of case studies, consistent effects were found through engaging students in determining their own learning goals. Consideration of how to involve students in the selection of their own goals and learning methods is warranted based on the results of this study.

The SLP has an opportunity to use the findings of this research by engaging students in her caseload who use AAC systems to make choices regarding adaptation of the general education curriculum. For example, in consultation with the teacher, the SLP can determine the particular theme or content of the curriculum and then provide choices (within a limited set) to the student regarding books to read, goals to achieve, and self-evaluation feedback. In this way, the student is part of the selection of goals and follow-up evaluation in a given therapy context.

Lee, Wehmeyer, Soukup, and Palmer (2010) studied high school students with disabilities and their teachers' practices to engage them in instruction that meets general education standards. Lee et al. recommended adhering to the content of general education and increasing students' access learning through curriculum adaptations and augmentations. For example, one student may need strategies for note taking and review of material in alternative formats beyond teacher presentations given in only an auditory modality. Another student may require technology to assist learning through answering

questions in class using an AAC system or SGD. Lee et al. found positive relationships between curriculum modifications implemented by teachers in the high school setting and positive learning behaviors demonstrated by students, with higher engagement when curriculum modifications were provided. Interfering behaviors such as high activity levels and distractibility were significantly lower among students in general education classrooms where curricular modifications were provided.

The two studies reviewed in this section provide important practices for the SLP to consider when working to improve access to the general education curriculum for students with disabilities. These can be summarized as follows:

- Involve students in reviewing the general education curriculum standards, and offer choices in how they can participate.
- Provide guided choices in the selection of educational targets that match general education content in science, math, and language arts.
- Support students in determining goals for mastery, such as the number of new words that will be demonstrated related to curriculum standards by a predetermined point in the school year.
- Identify and implement alternative strategies for students to understand, express, and engage with the curriculum content, consistent with UDL principles.
- Evaluate progress and share the results with students at regular intervals.

Response to intervention

The RTI approach in education is a multi-tiered approach for identifying students at risk for academic failure in school settings, using universal screening, progress monitoring, and identification of individual students struggling in the classroom (Fuchs & Fuchs, 2001; Grether, 2009). IDEA 2004 provided legislative underpinnings for the RTI approach by allowing schools to recognize and respond to the needs of students who show signs

of learning disabilities in the general curriculum through increasingly intensive interventions in advance of and following the development of Individualized Educational Programs (IEPs). While the implementation of the RTI approach was originally intended to support earlier intervention to students with learning disabilities, the concept of RTI has extended to include all students who experience difficulty in learning in the regular classroom.

The multi-tiered approach has broad applications for students who use AAC to learn and communicate. Although students with AAC systems are most likely to be served in special education caseloads, with IEPs already in place, the context of multi-tiered interventions in the general education classroom can benefit students who access learning through multiple modalities that may include pictures, graphic icons, braille, sign language, and auditory and other means combined with print media.

In principle, a classroom designed to support students with learning difficulties in the RTI model can benefit all learners, specifically those students who use AAC systems. Grether (2009) identified methods to include preschool children who use AAC systems in the RTI approach through increased visual representations of language and literacy in the curriculum. Grether's work is adapted in Table 1.1 to illustrate specific examples of language and literacy interventions in each of the three RTI tiers that increase access to general curriculum materials and standards in elementary school settings.

Universal design for learning

Wehmeyer (2006) outlined the components of school reform that most impact students with disabilities, driven by the 2001 NCLB act, IDEA 2004, and the most recent regulations of IDEA in 2005. The requirements of IDEA that focus on access to the general education curriculum for all students, particularly those with disabilities, were first introduced in the amendments to IDEA in 1997 and further reinforced in IDEA 2004 (Ahearn, 2005;

Karger & Hitchcock, 2003). Three key provisions in IDEA are the requirements that each student's IEP include statements about (a) how the student's disability affects progress in the general education curriculum, (b) the modifications required for the student to progress in the regular curriculum, and (c) the special education services and supplementary aids required to ensure the student's progress in the general curriculum (Wehmeyer, 2006). To meet legal requirements and policy recommendations, the issues of access to the general curriculum need to be addressed in multiple ways that include the linking of general education standards to curriculum, environmental modifications, staff training, specialized services, assistive technology, augmentative communication, and curriculum modifications, to name a few (Sadao & Robinson, 2010). Wehmeyer proposed that the principles and practice of UDL provide the means to implement access to the general education curriculum for students with disabilities.

UDL is defined as "the design of instructional materials and activities that allows the learning goals to be achievable by individuals with wide differences in their abilities to see, hear, speak, move, read, write, understand English, attend, organize, engage, and remember" (Orkwis & McLane, 1998, p. 9). The universally designed curriculum has three essential qualities: (a) multiple representations of content, (b) multiple options for expression, and (c) multiple options for engagement (Rose, Meyer, & Hitchcock, 2005).

Wehmeyer suggested an open-ended rather than closed-ended approach to creating access to the general education curriculum for students with disabilities. Through an open-ended approach, for example, multiple representations of curriculum content can be designed to meet the needs of students with varying abilities and disabilities that may include photographs, digital images, and read-aloud programs to augment print materials. An

TABLE 1.1 RTI examples for student using AAC systems in language and literacy curriculum

Tier 1	Tier 2	Tier 3
Instruction for whole class with modifications for individual children	**Adjustments to class routines to accommodate specific needs**	**Increased emphasis on individualized, intensified approaches**
◗ Collaborate with the teacher to position visual prompts for language topics. ◗ Provide visual choice boards for books to read for all students. ◗ Build photo narratives of class activities for all students. ◗ Create a word wall for all children to choose target words in specific story or lesson.	◗ Develop curriculum-based communication boards. ◗ Create core vocabulary boards to generate questions and answers in response to particular story comprehension activities. ◗ Use small groups for literacy and language instruction, pairing strong students with those needing more support. ◗ Provide explicit instruction by modeling vocabulary and phonetic skills with visual tools for students using AAC.	◗ Provide time for individual practice for students using AAC to review vocabulary/phonological awareness targets with teacher or aide. ◗ Provide communication partner training for typical peers. ◗ Partner typical peers with students who use AAC to review language/literacy materials related to the specific story or theme for the day.

open-ended approach to access involves a wide range of options for students to have access to the curriculum content that is not possible when only one format (such as teacher lecture or print materials) is available. Table 1.2, adapted from Wehmeyer, demonstrates multiple means of representation, expression, and engagement for students with disabilities to participate in the general education curriculum.

The role of UDL principles and practices to make general education more accessible is primarily applicable in planning instruction. The advantages of the UDL approach include the up-front design for all learners to participate in the general education classroom. When creating access to the general education curriculum for each student with a disability, considerations of individual needs most often precede the development of curriculum adaptations, augmentation, or specialized aids and services. UDL is quite different in that respect from the approach of IDEA and the IEP. Rather than beginning with individual student needs, UDL begins by building in access for a wide variety of abilities and needs for all students.

Figure 1.1 illustrates the process for applying UDL to curriculum adaptation, while also incorporating

legal requirements for special education. The implementation of UDL in the school setting requires planning and adaptations for all learners in advance of the IEP process for each student. There appear to be two different ways to approach access to the general education curriculum for students with disabilities: (a) the UDL approach, which requires a whole-school initiative to design classrooms that are accessible for all and (b) the more traditional approach of assessing individual students and designing individualized access to the curriculum. It appears that the individualized approach may be more common. The collaborative, school-wide approach is advocated in UDL literature and resources.

For the SLP, using the UDL approach means working with the educational team to assure that classrooms have accessibility built in for students who use AAC systems, in advance of developing IEP goals. Recommended practice driven by UDL principles requires consideration of the context of the classroom to support motivation, expression, and engagement for all students. As stated by Ralabate (2011), "The real challenge for educators, then, is to provide learning opportunities in the general-education curriculum that are inclusive and effective for all students." For those students using

TABLE 1.2 Universal design for learning principles and curriculum access adaptations

Representation	Expression	Engagement
◗ Graphic organizers ◗ Digital talking books ◗ Animated graphic images ◗ Text reader ◗ Print with graphic images ◗ Highlighted print ◗ AAC device (SGD or VOCA)	◗ Drawings ◗ Multiple-choice photographs ◗ Communication board ◗ iPad App or other touch-screen device ◗ AAC device (SGD or VOCA)	◗ Eye-gaze response ◗ Gestural response ◗ Selection of choice on touch-screen device ◗ Activation of single message VOCA ◗ Selection of message on VOCA or SGD ◗ Speech with graphic aid ◗ Indication of activity on visual schedule

AAC systems, some guidelines for the SLP can be developed from UDL practices (see **Implementing UDL** on the following page).

Ahearn (2005) surveyed state-of-the-art methods used in schools in the United States to create access to the general education curriculum and reported uneven development across curriculum areas. Most often curriculum adaptations were found in the areas of reading, math, and writing. Nearly half of the 32 states responding reported that their schools were in the advanced stages of implementing access initiatives in reading. Linking to the general education standards is not currently the pervasive practice in schools, according to recent studies by Wehmeyer, Lattin, Lapp-Rincker, and Agran (2003) and Soukup, Wehmeyer, Bashinski, and Bovaird (2005). These authors reported in two different studies that students in special education classrooms engaged in far less instructional time related to grade-level curriculum standards than students with disabilities placed in general education classrooms.

Dyal, Carpenter, and Wright (2009) emphasized the leadership role of school administrators in keeping the welfare of each student paramount through practices that included knowledge and access to assistive technology (AT), understanding of the funding structure, support of fundamental student rights, and awareness of personnel training needs. Michael and Trezek (2006) described strategies
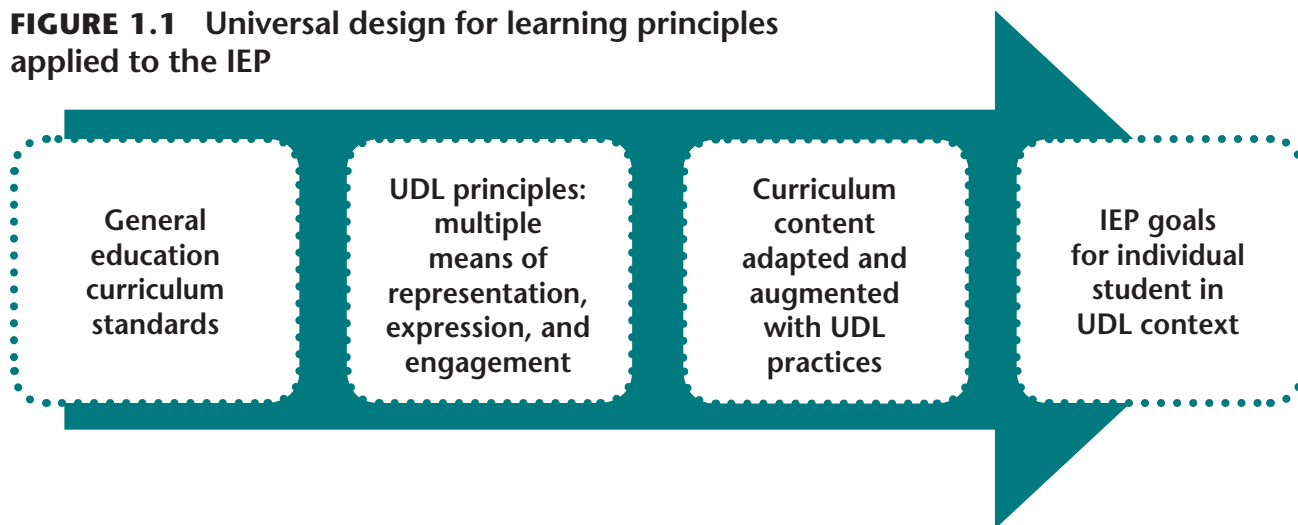
for advance planning that allow all learners to participate in classrooms that offer differing methods to demonstrate mastery of curriculum content and that value all approaches to the content in the same environment.

Differentiated instruction

Methods of adapting the curriculum to meet the needs of individual students are referred to as differentiated instruction. Throughout this chapter, we have examined means of adapting instruction to help students who use AAC systems learn the same curriculum content as typical peers and have introduced many aspects of differentiated instruction. Some additional discussion of differentiated instruction further highlights differentiated methods of engaging students in the general education curriculum. Although learning may occur through modified means, the same curriculum content is addressed for all students.

Briefly, differentiated instruction means providing different teaching methods to meet individualized needs in the classroom or context of general education. SLPs are very familiar with the process of differentiated instruction in the application of prompt hierarchies with students in individual and small-group speech and language therapy sessions. Often, differentiated levels of prompting and scaffolding are used to meet individual needs

FIGURE 1.1 Universal design for learning principles applied to the IEP

General education curriculum standards → UDL principles: multiple means of representation, expression, and engagement → Curriculum content adapted and augmented with UDL practices → IEP goals for individual student in UDL context

Implementing UDL

▶ Consider the needs of students who need alternative methods to access print materials through simultaneous use of print and icons or pictures to convey key concepts.

▶ Examine the curriculum with teachers to determine flexible and responsive ways to reach all students through increased use of visual supports in the classroom, such as visual schedules and photographic representations of special classroom events.

▶ Review assistive technologies that can be used in the classroom, such as computers for students to read classroom materials in digitized formats. These may include text-to-speech options for students who are verbal, allowing them to read aloud with the class.

▶ Conduct assessment and progress monitoring for students who use AAC with a variety of materials and adapted methods of assessment. These methods may include pointing to picture choices to determine knowledge and use of language functions such as vocabulary, syntax, morphology, and phonology. Extensive discussion of assessment tools and methods is provided in Chapter 2.

▶ Evaluate the core curriculum with the teacher to determine flexible goals with multiple ways for students to demonstrate learning in the curriculum. Ralabate (2011) provides the following example: "Identify the elements of fiction (problem, solution, character, and setting) and analyze how major events lead from problem to solution" (Massachusetts ELA Curriculum Frameworks, Standard 12). This example allows the student to meet the goal in multiple ways. The SLP can work with the teacher to establish alternative means for students with AAC systems to indicate fiction elements through communication boards designed for this purpose or adapted literacy tools that may include a story map to visually guide the student.

▶ Work toward a classroom culture that allows for diverse learning styles and accepts different modalities of communication. The SLP can model for all students in the class that one student may use a computer to read a book to others and another student may use pictures to tell a story. Acceptance can be established through multiple ways to achieve the same curriculum expectations.

▶ Examine barriers in the curriculum that may prevent students from participating with other students to use language and literacy skills. Barriers may include emphasis on responding verbally to the teacher's questions. The SLP can demonstrate and model multiple modalities of expression with students who use AAC systems, as described above. Anticipation of barriers for students who use AAC will help to prevent exclusion from the general curriculum. Additional guidelines for educators are available from the National Center for UDL in the form of the Educator Checklist and may be accessed at http://www.udlcenter.org/aboutudl/udlguidelines/downloads.

of students in a group. For example, one student may require only a "wh" question to complete a full sentence response, whereas another student may require the "wh" question and a partial model to be successful. The SLP can help teachers implement differentiated instruction through varied levels of prompting in the classroom.

Guiding principles of effective teaching are the foundation of differentiated instruction, assisting all students to reach the same curriculum standard. Hall (2011) identified guidelines to help educators design differentiated instruction to include students of diverse abilities and needs, including the following:

◗ Clarify key concepts and generalizations.
◗ Use assessment as a teaching tool to extend instruction, rather than to merely to measure it.
◗ Emphasize critical and creative thinking.
◗ Engage all learners.
◗ Provide a balance between teacher-assigned and student-selected tasks.

The above guidelines are applicable to students with complex communication needs in general education classrooms in several ways. For example, the SLP can design differentiated instruction through collaborative planning with teachers around each of these elements. Clarification of key concepts and generalizations can be accomplished with advance organizers and extension activities for the students' daily lives through visual representations, photos, and tools such as semantic maps. Question frameworks or "story maps" can provide a scaffold to aid and assess student comprehension of different question types and sequencing tasks, in both ongoing assessment and teaching. Critical and creative thinking can be fostered by reviewing and generating new words and ideas from the material. Further, engaging all learners in an inclusive lesson requires adapting to the varied abilities of the students and engaging stronger students as peer mentors. Finally, balancing teacher and student direction can be managed by using materials effectively for student choice of ideas and topics to expand upon.

Summary

This chapter provided an introduction to the challenges and opportunities confronting SLPs who strive to support teachers in their efforts to include students with significant disabilities in the milieu of general education. While legal mandates, policy, and recommended practice point the way to effective intervention models in schools, resources and expertise affect the actual implementation. The lens of UDL offers a perspective for SLPs to work as part of the educational team to collaboratively plan for access to learning for the most vulnerable and the most accomplished learners. Through advance planning in environmental design that includes physical, cognitive, visual, auditory, tactile, and other means of access to learning, SLPs and educators will find that low- and high-technology tools solve many challenges of access. In addition, SLPs need knowledge and skills to consult and collaborate with teachers in the design of learning methods that enable students with complex communication needs to comprehend and express them in the interaction of learning.