

## Research Review Summary

The Unique Learning System has been developed based on current research-based information that promotes access to standards-based learning and literacy instruction. This review will highlight specific referenced literature and research as it applies to the general education population as well as the known related literature and research for students with significant disabilities.

### Standards-based Curriculum for Students with Significant Disabilities

For the purpose of this document, a *student with a significant disability* is defined on the criteria described by Browder and Spooner (2006):

- The student requires substantial modification, adaptations, or supports to meaningfully access the grade-level content;
- The student requires intensive individualized instruction in order to acquire and generalize knowledge;
- The student is working toward alternate achievement standards for grade level content.

This will be identified as a broader term that may include students with multiple disabilities, severe cognitive disabilities and, in some instances, students with moderate disabilities.

### The Need for a Standards-based Curriculum

Curriculum refers to what students should know and be able to do as they progress through school. In today's educational process, the goals of the general curriculum are stated in the form of academic content standards, which are defined by each state.

- The 1997 amendments to IDEA require IEP teams to address how students with disabilities will *participate* and *progress* in the general curriculum.
- No Child Left Behind (NCLB 2001) requires schools to improve teaching and learning for ALL students, *including students with disabilities*.

These federal mandates provide specific directives that require all students, including *students with significant disabilities*, to have access to instruction and assessment that aligns with state standards.

Historically, students with significant disabilities had been participating in curriculum that focused on functional life skills applications with limited participation in academic skills. Educators are now challenged to select and design instruction that provides real-life activities within a meaningful context of academic learning.

NCLB also requires schools to use educational practices that are based on scientific research. While the research is more readily available for the general education population, there is still very limited research related to the academic education of students with significant disabilities.

In an observational study (Wehmeyer et al, 2003), students with disabilities who were served in the general education classroom were observed to be working on tasks related to a state standards more routinely than those served primarily in a self-contained settings. However, it was also observed that there were very few curriculum modifications being used to support students with significant disabilities to succeed in general curriculum-related tasks. Inclusion in the general education curriculum must address not only *where* the student receives his/her educational program, but also the quality of *what* the student is taught. (Turnball, Turnball and Wehmeyer, 2006).

- Regardless of the setting, students with significant disabilities must be included in an educational program that provides high quality standard-based instruction.

Curriculum mapping is a process that many schools use to define the content to be taught during the year. Schools can then be sure they are addressing all parts of the standards at the appropriate grades and across grade levels (Jacobs, 1997). Related to students with significant disabilities, this process may establish what students should know and be able to do that differs in *depth and complexity* from the expectations for other students in a particular grade level. This curriculum map must maintain the essence of the standard, thus assuring that students with significant disabilities have access to the general curriculum.

- Access to the general curriculum does not mean that individualization of instruction will be omitted. It does mean that the curriculum should follow a sequence of skills that progress across grade levels.

To assure the likelihood that students with significant disabilities have access to the general curriculum, teachers should diversify their instructional strategies to meet individual needs. Research has shown that differentiation of curricular content, the instructional process, and product requirements can effectively facilitate student access to, and success within, the general curriculum (Kronberg, 1999). A differentiated classroom requires a curriculum that offers multiple approaches to address the students' varied ability, interests, and learning preferences (Tomlinson 2002). For students with significant disabilities, this differentiation must be based on the individual abilities and needs of the student. This may involve a variety of accommodations, adaptations, augmentations, or alterations to the curriculum (Wehmeyer & Agran 2006).

With a standards-based curriculum, assessment is inseparable from instruction. Teachers need to assess what students know, what is important for them to know, and the individual strengths and needs of each student. Data regarding students with significant disabilities may be obtained through observations, structured task analysis, and student report measures. Through unit and lesson planning, teachers can match the learning targets with individual needs. From here, specific decisions can be made on the materials and instructional strategies that will be incorporated (Wehmeyer & Agran 2006).

- Many students with significant disabilities may also be participating in a statewide alternate assessment. Standards-based instruction in the classroom should be aligned to processes for alternate assessment.

## **Building Literacy Skills for Students with Significant Disabilities**

In far too many instances, literacy learning has been perceived as unattainable for students with significant disabilities. When in fact, students with significant disabilities can and do benefit from literacy instruction (Kliewer & Biklin (2001); Ryndak, Morrison, & Sommerstein (1999).

While reading may be defined as decoding and comprehending written text, it may also include listening and communicating. Literacy may well be more broadly defined as a means to learn about and share information. In this light, literacy learning has valuable implications for active participation for students with significant disabilities. Therefore, literacy skills, including reading and writing, are life skills that facilitate lifelong opportunities for learning and sharing (Downing 2006).

Downing (2006) defines five general guidelines for literacy instruction for students with significant disabilities:

1. Recognizing the link between communication and literacy;
2. Maintaining high expectations for students to acquire literacy;
3. Making literacy materials and activities accessible;
4. Following the interest of the child; and
5. Engaging the student in direct and systematic instruction.

A great deal of attention has been focused on the importance of early literacy experiences at home. (Nemann 1999; Sulzby & Teale 1991). Children who have been exposed to early literacy are more ready for formal instruction when they enter school (Temple 2001). However, many students with significant disabilities spend less time reading with their families and have had less access to writing materials. Many of these families have spent the early years on health concerns and physical development. (Light and Kelford Smith 1993).

Additionally, there is often an expectation that students with significant disabilities cannot benefit from literacy instruction. Families and educators have expressed this attitude. (Kliewer 1999). Wehmeyer (2003) warns that the literacy learning expectations for students with significant disabilities should not be lower, but instead emphasize the right of all students to have access to core curriculum.

- If students with significant disabilities are not provided *access* to literacy learning, it is certain that they will never be able to read or write. Literacy instruction must be presented with the expectation that learning will occur.

Educators must also realize the strong connection between literacy and communication. Communication occurs whenever a message, whether non-symbolic (e.g. facial expressions, gestures, vocalizations) or symbolic (e.g. speech, signs, pictures, print) occur. (Beukleman & Miranda 2005). To make the link to more conventional literacy, the student must see the message in pictorial or print forms, or feel the message in representational forms (e.g. hearing it on a communication device).

- Literacy learning becomes the natural avenue for building communication skills. Students with significant disabilities are often challenged by print alone, which often excludes them from typical learning materials. Literacy materials must be made accessible, not only for physical manipulation, but by adding pictures and objects along with print, or by modifying the cognitive demands of text content. Teachers will need specific strategies to help them understand the best ways to adapt materials so that it is accessible to the majority of the students. (Downing 2006).

Students with significant disabilities must be actively engaged in meaningful literacy experiences. Natural literacy learning opportunities can be recognized and optimized for instructional purposes across the school day. Incorporating pictures, symbols, speech and print within these naturally occurring events can increase the opportunities for literacy learning to occur (Downing 2005).

For most all learning, students with significant disabilities require direct and systematic instruction. (Justice & Pullen, 2003; Rowland & Sweigert, 2000). Downing (2006) describes the following components that must be included in this systematic instruction: identify and define the desired behavior, determine the shaping procedure, fade prompts, and measure the effectiveness of the intervention. When intervening with literacy instruction, these guidelines will assist teachers in successful literacy learning.

- With high expectations, appropriately adapted materials, and well-defined strategies, students with significant disabilities can and do benefit from literacy instruction.

### **From Emerging to Conventional Literacy**

Emergent literacy involves the reading and writing behaviors that develop into conventional reading. (Sulzby & Barnhart 1992). These emergent skills are highly dependent on the early literacy skills that a student has prior to entering school. As noted earlier, many students with significant disabilities have had fewer opportunities to engage in emerging literacy experiences. It was also noted in the Beginning Literacy Framework (Erickson, Musselwhite and Ziolkowski 2002) that many students with significant disabilities get “stuck” at this level and are challenged to transition toward more conventional reading. Literacy instruction for students with significant disabilities must promote early literacy experiences with books and print as a foundation for learning to read.

Numerous studies have shown that students with moderate and significant disabilities can learn to recognize sight words. However, a sight words approach alone is limiting. Students are limited to the vocabulary that is introduced and taught. (Browder & Xin, 1998). These studies of sight word learning do not measure comprehension or functional use. A sight word approach does not teach words in a larger context. There are several strategies that can be incorporated with this sight approach that will support early emerging skills for *concept of word*. Repeated readings of sentences while pointing to each word build word recognition skills. (Morris 1993). Picture and symbol associations with print words will help students learn targeted sight words. (Gately 2004). Several studies examined the use of systematic prompt fading for the teaching of

sight words when first introducing the word paired with a picture. (Browder 2006). Sight word instruction can benefit students if blended with other literacy strategies.

Minimal research has focused on teaching other reading skills to students with significant disabilities. Teaching phonics, building comprehension skills, and reading fluency are all areas of instruction that provide extensive research for typically developing students. Research and experience does indicate that students with significant disabilities have the same needs for learning literacy, however, they need different ways to show what they know. (Koppenhaver 2000). Within the limited research, there are indications that students with mental retardation have the potential to learn phonics skills. (Joseph and Seery 2004). However, no specific evidence-based practice for phonics instructions has been suggested. Today's practice in the field indicates that students with significant disabilities should receive instruction in a balance literacy approach with appropriated leveled reading materials, adaptations, and technology. (Erickson & Koppenhaver 1997, 2007).

The Four-Blocks Literacy Framework is a research-based systematic instruction format that provides a range of experiences to support various student profiles. The Four –Block Framework incorporates four different approaches to teaching reading – Guided Reading, Self-Selected Reading, Writing and Working with Words. (Cunningham, Hall and Defee 1991). For students with significant disabilities, this framework for instruction can be adapted to meet individual needs. (Erickson & Koppenhaver 2007).

Browder (2006) suggests that reading instruction for students with significant disabilities follow a unit approach, which integrates many subjects into a theme. Research for students with mild disabilities have shown improved performance with a unit approach. (Englert, Raphael & Mariage, 1994; Mastropierie and Scruggs, 1994). Elements of an inclusive unit design include: 1. A central unit issue, 2. an opening motivator, 3. lessons that are linked to the theme, 4. source materials, 5. culminating projects, 6. varied lesson formats, 7. multiple assessments, and 8. varied modes of student expression. (Onsoko & Jorgensen 1998). This format is also conducive to the varied needs of students with significant disabilities.

While many students with significant disabilities often lack the motor or cognitive skills for typical writing, the ability to create written language is an important means for communication. Technology tools and software provide a valuable means to engage students in writing instruction. (Browder 2006).

- While the research on literacy instruction for students with significant disabilities is limited, it is apparent that these students can benefit from a systematic and well-balanced approach that teaches literacy skills through approaches that are recommended for other students.

### **Learning to Read**

Research over the past twenty years has revealed a great deal of understanding about the reading processes of skilled readers, and the most effective instructional methods. Much of this information has been summarized in three significant documents: *Beginning to Read: Thinking*

*and Learning about Print* (Adams, 1990), *Preventing Reading Difficulties in Young Children* (Snow, et al 1998) and *Put Reading First: The Research Building Blocks for Teaching Children to Read* (NICHD 2000).

The ability to read develops in a common path: pre-reading, learning to read, and reading to learn. (Chall 1983; Ehri 1998, 2002; Spear-Swerling & Sternberg 1996). These phases represent the progression through which reading develops.

At the pre-reading stage language development is the primary focus. Students develop expressive language that allows them to communicate thoughts and receptive language that allows them to understand what they hear. Additionally, they are gaining vocabulary and thinking skills that are necessary for reading comprehension. Students also become aware of letters and will recognize some familiar sight words. (Houston, et al 2006).

At the learning to read stage, students recognize words and begin to master the alphabetic principle where they can correspond letters and sounds in order to decode words. (Rayner, et al 2001). Students become skilled at using phonics to decode new words, as well as identifying that new words come from meaning of what they are reading. In turn, they are building a large vocabulary of words they can read by sight. If a student reads only by sight, he/she will not likely read accurately above a first or second grade level. In order to become a fluent reader, the student must acquire phonics skills and practice these skills in a variety of reading materials. (Houston, et al 2006).

During the learning to read phase, students continue to expand vocabulary and language comprehension skills. They also increase their capacity to quickly identify words. Students are applying strategies to gain meaning from a variety of reading materials. (Houston, et al 2006).

The National Reading Panel (NRP 2000) report in 2000 identifies the key skills and methods that are central to reading achievement. The findings of this report provide analysis and discussion in five areas of reading instruction: ***phonemic awareness, phonics, fluency, vocabulary, and text comprehension***.

- Phonemic Awareness is the ability to recognize and manipulate individual sounds, or phonemes, in words. (Wagner & Torgesen 1998).
- Phonics refers to the understanding and learning of the relationships between spoken sounds and letters in words. This skill is critical to becoming a good reader. (Rayner et al 2001).
- Students are fluent when they are able to read text smoothly, accurately and with expression. (Meyer & Felton 1999). Fluency is necessary for good comprehension.
- Vocabulary instruction focuses on building knowledge of what words mean. Students must know what the words mean before the text will make sense to them.
- Text comprehension is the use of strategies that give students skills to make meaning from text. Reading has a purpose.

Current research indicates that students with disabilities should be instructed on these major skills that are taught in the regular classroom. However, this instruction must be more *explicit and intensive* in order for students with disabilities to acquire useful reading skills. (Vaughn &

Linan-Thompson 2003). Much of this research has focused on students with mild to moderate disabilities.

It is still unclear on how much growth can be expected for students with significant disabilities. These challenges for literacy learning may be related to the relationship of cognition and literacy learning, the associated impairments that students may have, the attitudes and expectations for students to learn to read, and the nature of the instruction provided. (Koppenhaver & Yoder 1992). The most significant factor for reading achievement for students with significant disabilities might be the student's language abilities. Language is the basis for learning the other skills that have been identified for reading success. The following summarizes instruction implications that need to be considered for students with significant disabilities:

- **Vocabulary Instruction:** Students with well-developed general language skills are better prepared to achieve higher levels of reading and comprehension (Wren 2000). Provide opportunities to use language and build vocabulary. Expose students to reading, including dialogic reading, also called shared reading, which encourages student to be an active participant in the reading process. (Whitehurst & Lonigan 2001).
- **Phonemic Awareness Instruction:** Develop phonemic awareness skills using instructional strategies similar to typical students. However, realize that students with significant disabilities may progress more slowly and may extend longer in the reading process. (Al Otaiba and Hops 2004).
- **Phonics Instruction:** Build on initial word-family instruction. Research indicates that students with moderate disabilities were able to recognize words more rapidly when using onset-rime instruction. It was also found that teaching spelling in conjunction with sound-symbol skills helped students generalize to sounding out and reading new words. Another promising intervention is the use of technology that highlights words on a computer to build the relationship between letters and sounds in words. (Bourassa & Levy 2001).
- **Word Recognition Instruction:** Focusing on words that are frequently encountered in the environment can facilitate automatic word recognition. Developing decoding skills at any level will provide a strategy to decode unknown words. Introducing and then fading picture/word pairs has been a successful word recognition strategy for students with significant disabilities. (Browder, 2001; Sheely 2002).
- **Reading Fluency Instruction:** Shared and guided reading, repeated reading and read alouds have been shown to be effective in developing reading fluency. (National Reading panel 2000). Read alouds provide a model of fluent reading and is more effective when it is interactive. (Fisher and Frey 2003). Materials may need to be available in adapted formats to increase the participation level for students with significant disabilities.
- **Comprehension Instruction:** Building vocabulary and verbal thinking skills in listening comprehension is an important precursor to reading skills for students with significant disabilities. Shared reading can build vocabulary, but can also strengthen skills for comprehension. Direct instruction to build strategies for main ideas, questioning, prediction and summarization will be important. (Houston et al 2006) Meaning-making should be incorporated in before, during and after reading activities. (Copeland 2007).

Further research on students with significant disabilities must focus on how and to what degree these individual are able to develop reading skills. The implications of evidence-based practices for students with significant disabilities will need to be evaluated so that determinations can be made on the most effective instructional strategies for these students.

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