Multisensory Instruction in Reading: What Does the Research Tell Us?

Educators often ask, "Is there research to support multisensory instruction?" It may surprise you to learn that the answer is not clear-cut.

THE HISTORY OF MULTISENSORY TECHNIQUES IN LITERACY INSTRUCTION

The earliest documented use of multisensory techniques in literacy instruction was by Samuel Orton, a neurologist and physiologist who developed a multisensory method of reading instruction for struggling readers in the 1920's (Stoner, 1991). Orton believed that students who suffered from reading disabilities would not learn to read unless they received "carefully structured, multi-sensory teaching" (Stoner, 1991, p. 21). Anna Gillingham and Bessie Stillman built upon Orton's ideas and outlined a "language triangle" consisting of links between the visual, auditory, and kinesthetic-tactile input systems (Henry, 1998; Joshi, et al., 2002; Oakland, Black, Stanford, Nussbaum, & Balise, 1998; Thorpe & Borden, 1985). They believed educators should employ "all possible 'linkages' between visual, auditory, kinesthetic, and tactile channels" (Thorpe, et al., 1981, p. 334) when teaching students to read. Grace Fernald also began to explore the simultaneous use of visual, auditory, and kinesthetic learning methods in the 1920's (Thorpe, et al., 1981). By the 1940's, Fernald had developed her own multisensory approach to reading and spelling instruction, called VAKT. This approach utilized visual, auditory, kinesthetic, and tactile elements at once (Myers, 1978). It has come to be known as the Fernald Technique, or sometimes the tracing method (Miccinati, 1979). Like Orton, Fernald believed that this multisensory approach would help children who struggled to read with traditional methods (Myers, 1978).

WHAT IS MULTISENSORY INSTRUCTION?

Multisensory instruction is typically described as instruction that allows students to use multiple senses or sensory pathways to create links between printed words and the speech sounds those words represent (Campbell, et al., 2008; Joshi, et al., 2002; Sadoski & Willson, 2006; Thorpe & Borden, 1985; Thorpe, et al., 1981). Traditional reading instruction mainly focuses on visual and auditory techniques; students are taught to associate the letters they see with the sounds those letters spell and to associate groups of letters with spoken words. In contrast, multisensory instruction helps students utilize not only visual and auditory cues, but kinesthetic and tactile cues as well, thus opening up additional pathways for remembering and retrieving information (Block, Parris, & Whiteley, 2008; Joshi, et al., 2002; Marley, Levin, & Glenberg, 2010). For many beginning and struggling readers, the simultaneous use of two or more sensory pathways can maximize sensory input to the brain as information is presented (Block, et al., 2008; Joshi, et al., 2002; Thorpe & Borden, 1985), which can help them compensate for their visual and auditory input weaknesses (Campbell, et al., 2008; Thorpe & Borden, 1985).

MULTISENSORY INSTRUCTION AND THE BRAIN

Research has shown the benefits of movement on the brain and provides a neurological basis for the benefits of multisensory instruction (Jensen, 2005; Sousa, 2022). The brain is constantly seeking to survive and succeed. One specific way the brain does this is through seeking out novelties, or things that are new or changing within the environment (Sousa, 2022). When teachers use novelties to their advantage during instruction, they are more likely to grab the brain's attention and increase engagement. Research has shown that engagement activates the pleasure areas of the brain more than rote memorization activities (Jensen, 2005; Sousa, 2022). When students are paying attention to their learning, it usually means they are mastering more of the material (Jensen, 2005).

Teachers can use multisensory techniques and tools as novelties to grab the brain's attention during instruction. Multisensory activities are an excellent way to help students orient, engage, and maintain their attention on a task while at the same time excluding other external or internal stimuli (Jensen, 2005). Movement is one example of a multisensory strategy to use in the classroom. Brain research has shown that movement can enhance learning, improve memory and recall, and enhance student motivation (Jensen, 2005). In fact, movement and learning are both processed in the same area of the brain (Jensen, 2005). Brain research overwhelmingly supports the need for integrating movement consistently into everyday learning in the classroom (Jensen, 2005).

WHAT DOES THE RESEARCH SAY?

Many educators have found that multisensory instructional techniques can help students use multiple sensory pathways to create links between speech and print (Campbell, Helf, & Cooke, 2008; Joshi, et al., 2002; Thorpe & Borden, 1985; Thorpe, Lampe, Nash, & Chiang, 1981). Multisensory instruction can be especially effective for students with dyslexia and other learning or language-based disabilities because these students often struggle to process visual and auditory input (Campbell, et al., 2008; Thorpe & Borden, 1985). Although researchers generally agree that there is a dearth of empirical research on the use of multisensory instructional techniques (Joshi, et al., 2002; Oakland, et al., 1998; Thorpe & Borden, 1985; Thorpe, et al. 1981), these techniques have been successfully employed by educators for nearly a century, and there are some studies that document their effectiveness.

Joshi, et al. (2002) found that the multisensory program they examined significantly improved students' decoding, phonological awareness, and reading comprehension. Sadoski and Willson (2006) and Vickery, et al. (1987) found that general reading and spelling achievement greatly improved due to the multisensory programs. Five studies found statistically significant improvements for students following the implementation of multisensory techniques such as tracing letters or words with students' fingers, using kinesthetic movements or hand motions, or using manipulatives that students touched or moved. These studies found improvements in either decoding (Campbell, et al., 2008), word recognition (Thorpe & Borden, 1985; Thorpe, et al., 1981), reading comprehension (Block, et al., 2008), phonological awareness (Rule, et al., 2006), or listening comprehension (Marley & Szabo, 2010).

WHAT DOES THE RESEARCH NOT SAY?

Campbell, et al. (2008) explained that multisensory components of instruction are often studied "as part of a larger intervention package," such as a full reading program. This makes it difficult to determine if the multisensory aspects of the instruction are the cause of student gains, rather than other features of the instruction. There hasn't been much research about specific types of manipulatives because it's hard to isolate one type of manipulative or one type of "sense" to gauge whether it is effective. This is an area where further research is needed.

REALLY GREAT READING'S MULTISENSORY INSTRUCTION

Really Great Reading's foundational reading skills lessons use multisensory techniques to help students build their phonological and phonemic awareness and decoding skills. In all Really Great Reading programs, instruction is presented to address and stimulate multiple senses: aural, visual, and kinesthetic. The simultaneous use of sound and movement during systematic instruction, along with the use of manipulatives such as letter tiles, color tiles, and SyllaBoards™, allows students to utilize multiple senses while learning. This is key to building the skills that emerging and struggling readers lack.

In Really Great Reading's programs, students use manipulatives when segmenting, blending, and spelling both sounds and whole words. They use hand movements to help them remember syllable types and vowel phonemes. They also see animations that reinforce the phonics concepts and visual representations of those concepts on the screen, and they have opportunities to build their vocabulary as many of the

words used in the activities are matched with images on the screen. These multisensory techniques leverage students' multiple sensory pathways to make learning concepts both sticky and fun.

WHERE DO WE GO FROM HERE?

Although empirical studies conducted over the past four decades have shown that multisensory instruction has produced gains for some beginning and struggling readers, it is still unknown which specific multisensory techniques are most effective, and it is evident that this type of research is difficult to conduct due to the interwoven nature of multisensory components of instruction with other beneficial features of strong literacy instruction, such as instruction that is systematic, explicit, and based on principles of structured literacy. Additional research on the effects of multisensory instructional components, particularly on decoding and word reading, is needed with large groups of students so that the results may be reliably generalized.

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