



Is Our Educational System Contributing to Attention & Learning Problems?

by Susan R. Johnson, MD, FAAP

In over 20 years as a Developmental and Behavioral Pediatrician I have seen countless children diagnosed with attention deficit disorders and learning disabilities. Many improve miraculously when transferred from academic kindergartens to classrooms emphasizing movement and the integration of their sensory systems. Why? Because their bodies and minds are not yet neurologically ready for academics. Pushing reading and writing early makes no sense for many young children who have not yet mastered the developmental progression that is a pre-requisite for academic learning.

Sensory and Motor Pre-requisites for Learning

Tactile, proprioceptive, vestibular, visual, and auditory systems come together to allow children to balance, concentrate, tell right from left, locate their bodies in space, sit still, make eye contact, and visually track. Bodily movements, starting in utero, and continuing through infancy, childhood, and beyond, form neural pathways that students later use to read, write, spell, and do math. Children integrate and strengthen these neural pathways by physical activities, not through flash cards or electronic games.

They need large movements, such as walking, skipping, hopping, running, rolling, playing catch, and jumping rope, as well as fine motor activities using their hands and fingers: clapping, cutting, digging, kneading, pulling, painting, beading, drawing, sewing, and knitting. The out-of-doors provides many natural opportunities for gardening, collecting specimens, and playing. In contrast, watching television or videos and playing computer games are extremely poor sources of stimulation for sensory-motor development. While the former promote nerve myelination and brain development, the latter actually over-stimulate the “fight or flight” sympathetic nervous system. The stressed out minds and bodies of children with overactive sympathetic nervous systems cannot make neural pathways. They also over-react to the stimulant effects of sugar, chocolate, television, video, and computer games.

Brain Development and Academics

The right brain recognizes a word’s overall shape, not individual letters; it develops first, around ages four to seven. The left side of the brain, typically the home of language, does not fully develop for reading until around ages seven to nine, often later in boys. When children read and write before age seven, they are forced to use only their right brains to guess at unfamiliar words based on their first and last letters, rather than sound them out, a left hemisphere activity.

Children who read and spell with only their right hemisphere often reverse numbers and letters, spell and write poorly, and have difficulties using phonics to match sounds to letters. These children also have trouble creating pictures in their minds associated with the words they are reading. Since their right hemisphere is overwhelmed by the task of reading everything by sight, it is not free to imagine. Comprehension now suffers. Once both sides of the brain are fully developed, pathways connecting the right and left sides form, and bilateral integration skills emerge, allowing them to use both sides of the brain flexibly.

Symptoms Showing Lack of Academic Readiness

Developmentally, children with difficulties learning to read and write follow a pattern. Here are some symptoms to look for:

- mouth and tongue movements and/or tense and fistful pencil grip when writing;
- difficulty sitting still, focusing, listening;
- strong need to move;
- drawings of a person that are stick figures and lack details;
- poor visual tracking and converging;
- startling at or difficulty catching a moving ball.

A Formula for Academic Success

Parents and teachers must provide young children with strong foundations for brain development and bilateral integration in preparation for learning. The formula is simple: adequate sleep, predictable rhythms and routines, limited “screen time,” wholesome nutrition, including omega 3 fats, physical warmth, harmonious non-competitive rhythmic movements, and, most importantly, love. This combination assures that children stay in their relaxed autonomic nervous systems, which fosters brain development and growth.

Checklist for Academic Readiness

Children who are ready to read and write are able to:

- skip cross-laterally and jump rope;
- sit still in chairs and pay attention for at least 20 minutes without wiggling, sitting on or wrapping their feet around the chairs’ legs;
- balance on one foot, with arms stretched out in front, palms up, eyes closed, for 10 seconds;
- reproduce geometric shapes, numbers, or letters on a piece of paper from “feeling” the figure that someone has drawn on their backs.

What Parents and Teachers Can Do

Choose preschools, kindergartens, and elementary classrooms that promote daily movement and encourage creative play. Learning is not “all in your head.”

I believe that our current epidemic of attention and learning problems comes, at least in part, from our environment. When schools support healthy activities, and stop trying to teach our very young children to read and write, then we will start seeing confident eight and nine year olds who can listen, focus, sit still, write, read, pay attention, learn with ease, and think in imaginative and creative ways.

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