Active learning - Brain Highways program helps children develop skills

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Play-Doh. Silly Putty. Tennis balls.
The essentials in every classroom.
Well, at least at Paul Ecke Central Elementary School in Encinitas.

San Diego's North County Times photographer Jamie Scott Lytle and staff writer, Cyndie Claypool de Neve reported on the Brain Highways program.

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Third-graders hunt for compound words in the newspaper. They cover the word with Silly Putty. Press down hard. Then transfer the imprint to a blank piece of paper. Press again.

Other children wrap Play-Doh around their pencils to help prevent them from writing with a death grip. One boy laughs as he presses too hard and dents the Play-Doh.

Down the hall, kindergartners practice counting while strengthening the fine-motor skills needed to hold a pencil correctly. Using a tennis ball with a slit for a mouth, and two drawn-on eyes, the students count out six cents in coins, then feed to the “monster” by squeezing the tennis ball six times.

Another group walks an Adventure Trail outdoors, trying to avoid cut-out snakes, cactuses and T. Rexes, and stopping to read the words describing each site. The kindergartners rattle off “that,” “they,” “this,” as easily as second-graders.

These are more than just fun ways to engage students. They are part of the Brain Highways program, created by Nancy Sokol Green of Encinitas, which provides specific movement and sensory experiences to build and strengthen essential nerve paths.

“It’s about using meaningful movement that enhances learning that helps make connections in the brain,” explained Elizabeth O’Toole, principal at Paloma Elementary School in San Marcos, which is also using the program.

Building highways

“The main point is to get meaningful movement in the kids’ classrooms,” said Green, sitting in the program’s Brain Lab at Paul Ecke. The room is filled with balance beams, rocking balance boards, a small trampoline, a large ball and rows of clear plastic containers filled with everyday household items and explanations of educational games for the children to play.

“When they’re moving, they can learn anything,” she said, stopping to give a student a big smile and her usual high-five.

Green was a teacher for five years in southeast San Jose before becoming an educational consultant 20 years ago. During her career, she noticed more children struggling academically, as well as a rise in learning disabilities and attention-deficit disorders.

She pored over the plethora of recent brain research that has emerged, thanks to modern brain-imaging technology. Much of the research she cites on her Web site focuses on the relationship between a child’s early experiences and the establishment of a strong foundation for later learning. Among the research she cites are:

-- A study that showed that children who do not crawl adequately are more likely to be hyperactive and suffer learning disabilities, since they may not have mastered eye-hand coordination (Walsh, 1980).

-- A study that confirms there is a pathway from the cerebellum (known for its role in posture, coordination, balance and movement) to parts of the brain involved in memory, attention, and spatial perception (Strick, 1995).

-- A study that found that movement and physical activity help to integrate both brain hemispheres. If this integration hasn't occurred by age 7, a child will have learning difficulties and not perform to full potential (Taylor, 1997).

Movement is the key

Green said she realized that today's children may have missed some important neurological foundations that used to be created naturally through such multisensory activities as making mud pies, rolling down grassy hills, and playing hop-scotch.

Instead, she said, modern children more often are sitting in front of a computer, television set or video game. This can result in difficulty with visual, auditory, fine-motor or gross-motor skills.

But, Green said, there is hope. Recent research shows that the brain can re-wire itself, and Green devised the Brain Highway program to be a fun way to go back and create those neurological "paths" that might have been missed in a child's early years.

"Many of today's kids did not finish development of their lower parts of the brain," she explained. "As a result, such kids are trying to learn, pay attention, and demonstrate self-control with disorganized brains. In such cases, there is a constant tug-of-war between the cortex ---- the thinking part of the brain ---- and the lower, survival parts of the brain.

"Brain Highways provides simple ways to finish that development and thus reorganize the brain so it works efficiently. Until the brain becomes well-organized, many kids simply need to move in order to learn with ease and success."

From the principal's desk

Green started creating Brain Highways in 1999, using Paul Ecke School for her pilot site. Now five other elementary schools are using it: Capri, Ocean Knoll and Mission Estancia in Encinitas; Paloma in San Marcos; and North Broadway in Escondido.

For using the program, Paloma received the 2003 "Best Practice" award from the San Diego Business Roundtable of Education, a group of 123 local businesses that honors exemplary and innovative school programs.

Paloma Principal O'Toole said she's "absolutely thrilled" with how her kindergarten teachers are using Brain Highways.

"We feel so strongly about this program. We've seen such neat results that my plan for next year is to train the first-grade teachers."

O'Toole and Green recalled one kindergartner who did not know any letters or their sounds, despite constant lessons during the first three months of school.

However, as soon as the teachers began using Brain Highways techniques, the child was able to identify letters and letter sounds. Six months later, the student not only knows every letter and sound, but is able to spell words correctly on spelling tests, said Green.

The greatest benefit is that the training has changed the way the teachers see the students, O'Toole added.

"So when a kid is moving a lot, rocking back and forth, instead of thinking 'Why can't Johnny sit still?' they think, 'He needs to move. He's trying to wake up his (brain's) vestibular system.' They have started looking at the students in a different light. They adjust, so the kids are getting enough movement to keep their brains really focusing."

Skeptical at first

Chriss Allen of Encinitas, a clinical psychologist who specializes in child development, was skeptical of Brain Highways.

"I thought it was another fad," said Allen. "My husband is also a psychologist, and he was skeptical too."

But their son, Gabe, who was struggling to keep up with his third-grade class at Paul Ecke, wanted to participate in the school's Brain Lab, where some students come two to three times a week.

"When Gabe was interested in it, I knew I had to follow through," said Allen.

For years, Allen, who has a certificate in special education, had tried everything she knew to help her son develop his fine- and gross-motor skills.

"But nothing really worked," she said. "It was like slogging through molasses. He's a really smart kid, but it was so hard for him."

So they were surprised when "it began to work well," she said, "and I was fascinated with why it was working."

Allen said she discovered Green had based her work on well-respected brain research. "It's like getting an ophthalmologist, physical therapist and occupational therapist" ---- without the cost, since the program is offered to mainstream students in public schools. "Nancy really put together a program that's very unique because it combines all these areas."

In the classroom

Gabe happily talked about his school's Brain Highways program. Previously, he said, he had struggled to write a couple of sentences. But after participating in Brain Highways activities, he's been writing more easily. He proudly showed off a page and a half of legible writing. Before, said Gabe, "Every time I wrote, it made me so tired. Now I like writing."

His teacher, Julie Hinze, began adding Brain Highways techniques three years ago. Hinze, a teacher for 25 years, said she started slowly. "Then I made the transition to include the techniques into all the curriculum."

She said hers is a far different classroom from the days when she had kids sitting in straight rows, concentrating on desk work, instead of doing activities that incorporate movement during the more than six hours children spend at school.

Besides seeing the educational benefits of Brain Highways, Hinze has noticed the students are more engaged. Compared with her previous classes, she said, "The kids like this much better."

Nancy Sokol Green recently released "Adventure Trails," an e-book on a computer disk, to make it easy for parents and educators to begin the Brain Highways program at home or school. The e-book presents fun, simple movements and activities that Green says develop brain pathways, and includes video clips, articles explaining the correlation between activities and paying attention and learning, and research references. Log on to www.brainhighways.com.

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"The kinds of things we do in here the kids just love, which we also interpret as their brains intuitively know they need it," Green said. "It's like they've been starved for this kind of stimuli.

"It's all through movement, and that's what we don't do anymore," she said.

"If the brain is getting what it needs, you want to learn, you're happy and you're cooperative," Green said.

Ria Henshilwood, who practices the Brain Highways program with her 7-year-old daughter every morning, said their 15 to 20 minute home routine has changed both their lives.

Henshilwood said her daughter used to have problems with behavior, attention, focus and scholastic achievement.

"It was just challenging every single day," she said.

Henshilwood said their daily dedication to 10 Brain Highways exercises has brought about dramatic changes in her daughter.

"She's got more self-esteem," Henshilwood said. "She feels good about herself."

Terri Bass said the Brain Highways program has helped her 12-year-old son improve in spelling, reading, eye tracking, stress and coping skills.

“I recommend it all the time,” Bass said.

Green’s program is the expansion of a curriculum she has implemented in schools in Encinitas, San Marcos, Carlsbad and Escondido. Green said the program is open to all children aged 3 to 11, provided that their parents enroll too.

Open drop-in times during March are Mondays from 2 to 3 p.m. and 5 to 6 p.m., Tuesdays from 3:30 to 5 p.m. and Wednesdays from 5 to 6 p.m. at the Brain Highways Center, located at 207 S. El Camino Real in Encinitas.

“If you want to go on the Brain Highways ride, we’ll take you along,” Green said.

For information, call 760-943-0496 or visit www.brainhighways.com.