

Tuesday, October 5, 2010 D1

# How Handwriting Trains the Brain

## Forming Letters Is Key to Learning, Memory, Ideas

By GWENDOLYN BOUNDS

Ask preschooler Zane Pike to write his name or the alphabet, then watch this 4-year-old's stubborn side kick in. He spurns practice at school and tosses aside workbooks at home. But Angie Pike, Zane's mom, persists, believing that handwriting is a building block to learning.

She's right. Using advanced tools such as magnetic resonance imaging, researchers are finding that writing by hand is more than just a way to communicate. The practice helps with learning letters and shapes, can improve idea composition and expression, and may aid fine motor-skill development.

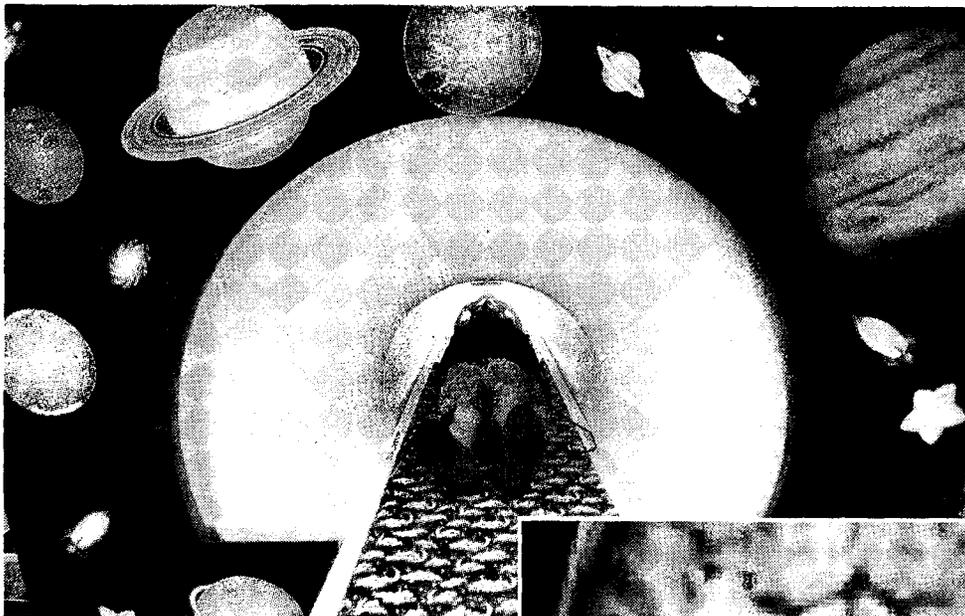
It's not just children who benefit. Adults studying new symbols, such as Chinese characters, might enhance recognition by writing the characters by hand, researchers say. Some physicians say handwriting could be a good cognitive exercise for baby boomers working to keep their minds sharp as they age.

Studies suggest there's real value in learning and maintaining this ancient skill, even as we increasingly communicate electronically via keyboards big and small. Indeed, technology often gets blamed for handwriting's demise. But in an interesting twist, new software for touch-screen devices, such as the iPad, is starting to reinvigorate the practice.

Most schools still include conventional handwriting instruction in their primary-grade curriculum, but today that amounts to just over an hour a week, according to Zaner-Bloser Inc., one of the nation's largest handwriting-curriculum publishers. Even at institutions that make it a strong priority, such as the private Brearley School in New York City, "some parents say, 'I can't believe you are wasting a minute on this,'" says Linda Boldt, the school's head of learning skills.

Recent research illustrates how writing by hand engages the brain in learning. During one study at Indiana University pub-

Please turn to page D4



▲ Four-year-old Zane Pike used to toss aside his handwriting books. Now, the Cabot, Ark., preschooler is learning to write his letters using smartphone application.

▲ For research at Indiana University, children undergo specialized MRI brain scans that spot neurological activity.

► In children who had practiced writing by hand, the scans showed heightened brain activity in a key area, circled on the image at right, indicating learning took place.

