

As it appeared in the Boston Globe

Kindergartners in the Butterfly classroom at the Young Achievers Science and Mathematics Pilot School in Jamaica Plain are looking at snails.

They are touching and drawing them, noticing "snails" has two S's, wondering if they bite, and why they leave that slimy, wet smear on their science notebooks. Alyssa Scott, 5, announces that she's "not scared," and predicts that "it probably tickles if you could hold it."

This may look like another cute, hands-on science lesson, but here science is not just something kids "do," it is how they learn the critical skills: reading and writing.

It used to be that the ABC's came first, and then later science. But a decade's worth of new brain study - including research showing 90 percent of a child's brain growth is completed by age 5 - is driving educators to rethink how children in early grades should be taught.

"What we're saying is the last decade or more of research into learning suggests that we underestimate the cognitive capability of young children," said Karen Worth, a scientist at Educational Development Center in Newton who has developed science-based curriculum for early literacy piloted at Young Achievers, a K-8 school with about 300 students, and 18 sites across the country.

Worth believes young children are ready to incorporate many ideas at once, and that it's useful to put learning in context so information isn't learned in isolation, perhaps to be forgotten. At Young Achievers, for example, students study the natural world at the Forest Hills Cemetery across the street.

Learning about letters because you need to write a word like "moss," Worth says, is more useful. Certainly, many parents grew up learning in two spheres: "school learning" and the stuff figured out by playing and interacting with people outside of school.

Worth worries children, driven by our test culture, "have lost the belief in their own observations." She recalled asking a child to point to the ocean. The child approached a map and put a finger on the ocean - even though the East Boston classroom overlooked the Atlantic.

Today, we continue to see a clash between legitimate concerns that kids need to nail down basic skills and brain research that says that learning begins when children are born and should build on their experiences, rather than pretend "real" education starts when they begin school.

As education policy demands that more children be engaged in learning that will stick, standardized tests demand them to demonstrate more traditional skills.

And yet, how can one argue that untestable learning shouldn't count?

In one Young Achievers classroom, children ages 4 to 6 opened a book about artist/ naturalist Andy Goldsworthy and imitated one of his sculptures using hemlock cones, twigs, and chestnuts. It was indistinguishable from a museum art installation and reflected sophisticated thinking. Similarly, when I asked a boy stacking blocks if he was making a tree, he corrected me. "A pine tree," he said.

Some of the children could write; others could not, but it was clear they had smarts - even if they weren't reading "Green Eggs and Ham." They also were having a ball. How do schools go from having charged-up kindergartners to high schoolers who skip class and don't do homework? Who's responsible for that transformation?

Gillian McNamee, director of teacher education at the Erikson Institute for Advanced Study in Child Development in Chicago, said brain research has been misinterpreted by public policy makers to mean pushing formal reading and writing curriculums into kindergarten - a move she calls damaging.

"What happens is kids go into kindergarten and it's as if their whole educational careers are on the line: Either you pick this up quickly, or my hopes of you being a smart kid are dashed," she said. "IQ has nothing to do with when a kid learns to read, but we act as if it does."

Barbara T. Bowman, a professor at Erikson, said research shows children learn to read when they are developmentally ready. "You can't decide, 'He's 4 years old, so we'll teach him all the letters in the alphabet,' " she said. On the other hand, said Bowman, children can learn what was once considered too advanced to teach; and more advanced thinking, reflecting, and discussion helps them read when they're ready.

"The more a child knows about the world, the better readers they will be, because they will have a better context for understanding," she said. "There is a good correlation between vocabulary and learning to read."

George Forman, professor emeritus at the University of Massachusetts School of Education in Amherst, said teachers need better tools to defend exploration. After all, it looks like play - not the drill-style learning associated with acquisition of skills and knowledge.

"We can't just wave our arms and say, 'The children are learning!' " Forman said. "We have to deconstruct it, document it."

At Young Achievers, the learning is so infectious kids are taking their families to the Forest Hill Cemetery, where the class makes weekly visits, said teacher Alicia Carroll. "They have a desire to read and write. It is a desire - not 'Today, we are doing the letter L,' " she said.

Teacher Liana Bond believes her students are not just learning more - but learning better.

"There is a real difference between looking in a book at a picture of a snail and seeing what happens when a snail bumps into something and sucks its

tentacles back into its body," Bond said. "They are asking deep questions, and they are asking for better knowledge than the superficial knowledge you end up losing."

Still, Bond said that teachers must be sure children are learning the basics. "The thing for me that is tricky is making sure that everybody gets what they need in all the skill areas," she said.

Send feedback and ideas to [chalkboard@globe.com](mailto:chalkboard@globe.com).

Caption:

1. Jeffrey Clark (from left), Yusuf Berry, and Christian Badgett measured rice at Young Achievers Science and Mathematics Pilot School last week. / GLOBE STAFF PHOTO / JANET KNOTT

2. Teacher Alicia Carroll helped Christian Badgett with a science project at Young Achievers Science and Mathematics Pilot School in Jamaica Plain last week. Carroll said the school's curriculum has improved the students' desire to read and write. PHOTO

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