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Microscopes vs. video games

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Something was missing when President Bush urged the continuation of No Child Left Behind in his State of the Union speech. Science.

Under No Child Left Behind, science has been left behind -- and so is losing its place in the American school system.

This is easy enough to see statistically. The percentage of graduate students in science and engineering has declined steadily since 1993. Meanwhile, imports of science and engineering brainpower are up almost 40 percent.

But it is more than statistics. The writers of this piece are parents as well as professors of biology. We have seen the trend at work from year to year in the schools our children attend -- all part of an American system that provides little or no science education until fourth grade, and even then only sporadically after that.

And although we willingly, as parents, volunteer to provide supplemental science education -- one of us was in a classroom not long ago with a few dozen fourth-graders and a collection of owl pellets -- it shouldn't take a parent volunteer or biology Ph.D. to provide the necessary science in our schools.

We feel a broader effort is needed to keep our children engaged and competitive at the forefront of world science.

As part of this effort, we propose that Congress strengthen No Child Left Behind to include "hands-on" science and experience in nature.

Science is not currently mandated under No Child Left Behind. This often forces teachers, in effect, to teach math and reading in great preference to science, with predictable results. A re-emphasis of science, moreover, would help in other ways than improved science scores and achievement.

Improves all tests scores

Studies have shown that immersion in science and nature in elementary school improves not only science scores but test scores in general. A project in California showed a 31 percent increase in composite scores when science was re-emphasized. Appropriate changes in the No Child Left Behind law could spread such improved composite scores across the county.

Moreover, a new emphasis on the study of science, especially the natural sciences, could be beneficial in ways that reach far beyond the classroom.

We spoke at the recent National Dialogue on Children and Nature in Washington D.C., hosted by Richard Louv, author of *Last Child in the Woods*, along with the U.S. Fish and Wildlife Service and the Conservation Fund. The topic addressed a growing "nature deficit disorder" in our children.

We presented our most recent work, showing that declining visits to national parks over the last 20 years could be explained in good part by increased time spent on in front of screens -- the movies, Internet and video games -- a phenomenon we call "videophilia."

The average person spends six hours a day -- more than 2,200 hours a year -- in front of movie and video screens, almost a one-third increase since 1988.

Young children in the United States, meanwhile, spend more than two hours a day just in front of the TV -- as opposed to about four minutes a day of unstructured time outdoors.

Evils of 'videophilia'

What does videophilia do? It has been correlated with negative psychological and physical effects including obesity, loneliness, depression, attention problems and greater social isolation due to reduced time with friends and family.

What do increased study of science and nature and its increased outdoor time accomplish? Especially in the very young, it has proved in studies extremely beneficial for cognitive functioning, reduced symptoms of attention deficit disorder, increased self-discipline and emotional well-being.

A restoration of science and nature in our schools would be a pathway not only toward improved world leadership in scientific research but toward the general well-being of our children and their hungry minds.

There is an important place for heartbeats, butterflies and owl pellets in No Child Left Behind.

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