

Can Students Have Too Much Tech?

By Susan Pinker

PRESIDENT OBAMA's domestic agenda, which he announced in his State of the Union address this month, has a lot to like: health care, maternity leave, affordable college. But there was one thing he got wrong. As part of his promise to educate American children for an increasingly competitive world, he vowed to "protect a free and open Internet" and "extend its reach to every classroom and every community."

More technology in the classroom has long been a policy-making panacea. But mounting evidence shows that showering students, especially those from struggling families, with networked devices will not shrink the class divide in education. If anything, it will widen it.

In the early 2000s, the Duke University economists Jacob Vigdor and Helen Ladd tracked the academic progress of nearly one million disadvantaged middle-school students against the dates they were given networked computers. The researchers assessed the students' math and reading skills annually for five years, and recorded how they spent their time. The news was not good.

"Students who gain access to a home computer between the 5th and 8th grades tend to witness a persistent decline in reading and math scores," the economists wrote, adding that license to surf the Internet was also linked to lower grades in younger children.

In fact, the students' academic scores dropped and remained depressed for as long as the researchers kept tabs on them. What's worse, the weaker students (boys, African-Americans) were more adversely affected than the rest. When their computers arrived, their reading scores fell off a cliff.

We don't know why this is, but we can speculate. With no adults to supervise them, many kids used their networked devices not for schoolwork, but to play games, troll social media and download entertainment. (And why not? Given their druthers, most adults would do the same.)

The problem is the differential impact on children from poor families. Babies born to low-income parents spend at least 40 percent of their waking hours in front of a screen — more than twice the time spent by middle-class babies. They also get far less cuddling and bantering over family meals than do more privileged children. The give-and-take of these interactions is what predicts robust vocabularies and school success. Apps and videos don't.

If children who spend more time with electronic devices are also more likely to be out of sync with their peers' behavior and learning by the fourth grade, why would adding more viewing and clicking to their school days be considered a good idea?

An unquestioned belief in the power of gadgetry has already led to educational snafus. Beginning in 2006, the nonprofit One Laptop Per Child project envisioned a digital utopia in which all students over 6 years old, worldwide, would own their own laptops. Impoverished children

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The wired classroom may actually widen the learning gap.

would thus have the power to go online and educate themselves — no school or teacher required. With laptops for poor children initially priced at \$400, donations poured in.

But the program didn't live up to the ballyhoo. For one thing, the machines were buggy and often broke down. And when they did work, the impoverished students who received free laptops spent more time on games and chat rooms and less time on their homework than before, according to the education researchers Mark Warschauer and Morgan Ames. It's drive-by education — adults distribute the laptops and then walk away.

It's true that there is often an initial uptick in students' engagement with their studies — interactive apps can be fun. But the novelty wears off after a few months, said Larry Cuban, an emeritus education professor at Stanford.

Technology does have a role in education. But as Randy Yerrick, a professor of education at the University at Buffalo,

told me, it is worth the investment only when it's perfectly suited to the task, in science simulations, for example, or to teach students with learning disabilities.

And, of course, technology can work only when it is deployed as a tool by a terrific, highly trained teacher. As extensive research shows, just one year with a gifted teacher in middle school makes it far less likely that a student will get pregnant in high school, and much more likely that she will go to college, earn a decent salary, live in a good neighborhood and save for retirement. To the extent that such a teacher can benefit from classroom technology, he or she should get it. But only when such teachers are effectively trained to apply a specific application to teaching a particular topic to a particular set of students — only then does classroom technology really work.

Even then, we still have no proof that the newly acquired, tech-centric skills that students learn in the classroom transfer to novel problems that they need to solve in other areas. While we're waiting to find out, the public money spent on wiring up classrooms should be matched by training and mentorship programs for teachers, so that a free and open Internet, reached through constantly evolving, beautifully packaged and compelling electronic tools, helps — not hampers — the progress of children who need help the most. □