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COMPUTERS IN THE CLASSROOM MAY DO MORE HARM THAN GOOD—IF THEY'RE OVERUSED

New research finds that computers are most effective as teaching tools when used sparingly, and to teach kids at certain ages specific subjects.

TOM JACOBS · JUN 6, 2019

Initiatives to provide every schoolchild with a laptop or tablet computer have, to date, been well-publicized failures. And perhaps they were bad ideas to begin with.

Computers can certainly be effective tools for teaching children of certain ages specific subjects. But a large new study suggests their presence in the classroom is far from universally positive.

"Students worldwide appear to perform best on tests when they report a low-to-moderate use of school computers," Helen Lee Bouygues, president of the Paris-based Reboot Foundation, argues in a just-released report.

"When students report having access to classroom computers and using these devices on an infrequent basis, they show better performance," Bouygues writes. "But when students report using these devices every day, and for several hours during the school day, performance lowers dramatically."

The Reboot Foundation is a non-profit devoted to "cultivating a capacity for critical thinking." Its new report suggests that, while computers can sometimes help children grasp certain concepts, their overuse is highly worrisome.

Bouygues analyzed data from two sources: the 2017 National Assessment of Educational Progress, which provided math and reading scores for American fourth- and eighth-graders, and the Program for International Student Assessment, which provided data from 30 nations.

After taking into account various factors that could affect student achievement, including household income, teacher training on the use of computers in education, and (for the international students) the size of the nation's economy, she identified several disturbing trends.

"Across most countries, a low to moderate use of school technology was generally associated with better performance, relative to students reporting no computer use at all," Bouygues writes. "But students who reported a high use of school technology trailed behind peers who reported moderate use."

For instance, students in France who reported using the Internet at school for a few minutes to a half-hour every day scored 13 points higher on the PISA reading assessment than students who reported spending no time on the Internet at school. Meanwhile, French students who were online in school for more than 30 minutes per day consistently scored lower than their peers on that same test.

A similar pattern was found for American youngsters. "Fourth-grade students who reported using laptops or desktop computers in more than half or all of their classes scored 10 points higher than students who reported never using those devices in class," the report states.

But the overuse of computers seems to have produced diminishing, and finally counterproductive, results.

"We found evidence of a learning-technology 'ceiling effect' in some areas, with low to moderate usage showing a positive relationship, while high usage showed a negative relationship [with student achievement]," Bouygues writes. "The results regarding tablet use in fourth-grade classes were particularly worrisome. Fourth-grade students who reported using tablets in all or almost all classes scored 14 points lower on the reading exam than students who reported never using classroom tablets. This difference in scores is equivalent to a full grade level, or a year's worth of teaching."

These results do not prove causation, but they're certainly cautionary.

"While there's clear evidence that technology can improve learning outcomes," the report concludes, "our data suggests that technology may not always be used in a way that prompts richer forms of learning. Our findings indicate schools and teachers should be more careful about when—and how—education technology is employed in classrooms."

So by all means bring an apple for the teacher. But that Apple for the student should spend the bulk of the school day switched off.