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Too Much Technology Is Bad for the Brain

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A *New York Times* article last week argued for the importance of handwriting instruction. Therein Maria Konnikova made a strong case, supported by several research citations, that cursive writing should not become a relic of the past. She wrote, "New evidence suggests that the links between handwriting and broader educational development run deep."

The threat to handwriting comes from the sharp turn toward keyboarding. The controversial Common Core, for example, gives scant attention to handwriting, evidently not seeing it as among the skills or experiences of any importance to growing brains. But Konnikova and the research she cites point to the critical cognitive processes involved in writing and suggests we ignore this at significant peril.

Konnikova's article, despite the quotation above, doesn't provide any surprising or new evidence. Thoughtful educators have been aware for many years of the perils of surrendering real human experience to the facile seduction of technology.

Many so-called educational reformers see technology as the panacea for what ails education in America, but technology is more a cause of what ails education than a cure for it. The cognitive risk of abandoning handwriting is a small manifestation of a huge problem. In the money-driven quest to digitize and automate education, we are neglecting the development of many human capacities than matter most.

I remember watching Microsoft ads on television years ago. The exquisitely produced footage showed brief images of children measuring cacti in the desert. They then cut to the same students producing colorful graphs and charts using Microsoft tools. They loved it, of course. It all seemed so "professional." But they would have learned far more by staying with the cacti a bit longer, charting their measurements on graph paper, doing the statistical calculations by hand and, perhaps most importantly, sleeping under the stars instead of going home to create PowerPoint presentations.

This is rapidly getting worse. Among the latest fads in educational reform is a campaign calling for teaching coding to all children, beginning as early as kindergarten. Coding is described as an indispensable skill for 21st-century employment. This campaign is driven in large part by those with a financial interest in the expansion of technology, just as were the unsuccessful laptop initiatives in many communities and the nearly universal failures of online education to deliver on its grand promises. This is not to suggest that coding is irrelevant or should be banned from the curriculum, but it is surely not something to inject into early childhood education.

This is a time of rapidly diminishing, perhaps negative, returns on technological development. At what point does miniaturization turn from convenience to silliness? How many megapixels does anyone really need? Do we not have sufficient "apps"? Yes, children find coding sort of interesting, and moving digital images around a screen is fun (and addictive), but is any of it really important?

Broad use of technology is inarguably harmful to young children. But among older students, emphasis on technology is more a sin of omission than one of commission. The damage comes from those things abandoned. Education is ultimately a zero-sum game. Every hour spent in the digital world, at school or at home, is an hour not spent doing something more valuable. The cognitive loss from surrendering handwriting to keyboarding is merely the tiny canary in the coal mine.

I have neither space nor expertise to offer a detailed explication of the neurobiology of learning, but any neurobiological dilettante knows that rich brain development requires engagement with the real stuff of the universe, not with its digital doppelganger.

Children should be building towers with blocks, not playing Minecraft. They should be singing and playing real acoustic instruments, not downloading from iTunes. Acting out the powerful elements of a period in history is exponentially more interesting and durable than navigating a software program to prepare for a test. Recess, where critical relationship skills are developed, is much more important than computer training. Believe me, I could go on, but I hope you will conjure up your own examples.

I am not a Luddite and know quite well that technology can provide some important educational experiences. But I worry that slavish, uncritical devotion to technological gimmickry is shortchanging our students.

If it is clear that something as simple as forming letters with a writing implement provides indispensable cognitive advantages over its digital shortcut, then you might imagine what harm we are doing children by surrendering so much else to the shallow appeal of technology.

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