

Standardized tests versus creativity

Martin Rowe -December 01, 2014



We've heard

it time and time again: the world needs more young people to study engineering. Some people claim that it's the "geek" reputation attached to engineers that drives them away. Others say it's the "look to your left, look to your right" attitude at some engineering schools. Others blame the high schools for not doing enough to encourage students to study engineering or science. We also hear that engineering students should exercise problem solving rather than studying facts. Why do students study facts? Could part of the problem come from standardized tests?

In Massachusetts where I live, public school students must take **MCAS** tests starting in third grade. Students must pass MCAS in the tenth grade or later to be eligible to graduate. Many other states and countries also administer standardized tests, used to assess teachers and students.

A recent *Boston Globe* [article](#) cites one of the problems with standardized tests. School systems try to fill their students with the facts they need to pass.

The article opens:

A high school English teacher in Boston likens those behind the testing craze sweeping Massachusetts to the approach of Thomas Gradgrind, the headmaster in the Charles Dickens novel "Hard Times." Gradgrind sternly told faculty to plant

nothing but facts in their students' minds, "and root out everything else."

If teachers spend their time filling students with the facts needed for the tests, how well are they preparing students to function once they graduate? Can they teach students to think and to find out what they need to know to solve a problem if the focus is on standardized tests? Teaching to the test can take time away from teaching students to think and to be creative.

As a general rule—at least here in Mass.—teachers in underperforming school districts are more likely to "teach to the test" in an effort to show how well they're doing. But, some high-performing schools may also teach to the MCAS tests just to make the principal look good. Where do you draw the line between the need for testing as a measure of success and testing too much? Does emphasis on testing diminish our ability to think once we're out of school?

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7 Comments

przemek0

Creativity without the knowledge of the facts is just as bad as the opposite which you critique here. You can't just not teach facts---that's a recipe for disaster; facts have to come first, and creativity can only be built on top of them.

The method of teaching does matter: "teaching to the test" is indeed flawed, but that's more of a problem with the tests than with the teaching. I think kids are smarter than we give them credit for: we should give them more work and see what sticks to whom.

Jan 3, 2015 4:11 PM EST

antiquus

The students that do well in STEM are not the students having trouble with tests. The to-be engineers are still the top few percent of all students, and I dare say that none is washed out by the MCAS or any other get-out-of-high-school requirement. You have but to judge the Intel science fair (or any other high-level competition), to see that those that will be engineers and scientists step through any academic requirement as a necessary evil.

Study for a few minutes, and realize that American schools are the very worst at using available data, especially those data that will eliminate the incompetent teacher. Note how many elementary schools are bringing in "math specialists" to achieve the goals required by the tests, because the typical elementary teacher can barely perform arithmetic, let alone teach it. The clamor over Common Core techniques has as much to do with the need to teach strategic arithmetic (e.g., why is repeated addition the same as multiplication), in

lieu of tactical arithmetic (e.g., just memorize that $6 \times 9 = 54$).

Jan 2, 2015 7:05 PM EST

Orings

The standardized tests were yet another fallout from the Regan/Thatcher years that swung the world into a free market free-for-all. Workers are a commodity, transferable to the lowest bidder. The idea that manufacturing could be done by far east economic slave labour while creative design and innovation would be done in the USA was also prevalent at the time. Need engines for that car? Make them in Brazil? Graft too high in Brazil? Make them next week in Columbia or wherever.

The class room with everyone nicely lined up in their desks memorizing facts fits in with the factory production line mentality where no one is required to think about or imagine the whole which in that model is just a sum of parts.

Standardized testing is simply there to appease the radical right wing that believes even middle managers (the teachers) should be monitored in the production environment.

The reality, sadly, is not everyone is suited to engineering, or teaching or any other University or College program. But when the jobs suited for those who struggle to make it through grade 9 are pushed offshore and a grade 12 is considered a minimum to drive a vehicle or dig ditches, something has to give.

When corporations are allowed to abrogate their responsibility to society by insisting that all workers, including engineers, come out of school ready and trained for the job, rather than as someone to nurture and educate for the long term the society is already on the slippery slope to the times of Dickens.

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Jan 2, 2015 12:41 PM EST

arclight_arclight

Some people may not recall why we placed such emphasis on standardized tests.

In the latter 1960s and 1970s there was a substantial amount of experimentation in how to educate children. The end results were mixed at best; in the limit, we graduated high-school students who simply could not read or write.

Standardized testing was thought to be a solution to this problem, because it would allow problems like this to be identified early. Unfortunately, it created the reaction of "teaching to the test".

Magflux is close with his solution, but here's a possibly better one: With all the computing technology we have today, it should be relatively easy to create for each subject a 50,000-question pool aimed at a specific grade level. Each student will be given a custom test with questions drawn at random from the 50,000-question pools for his / her grade level. That way the teachers and staff can certainly know all about the question pools, but won't have any prior knowledge of which questions will be on the test.

Dec 23, 2014 10:41 AM EST

MagFlux

Teachers and staff should have no prior knowledge of the contents of these tests. The teachers would then be obligated to teach the entire course as if it was all to be tested. What's wrong with that? Oh, I forgot, the teacher's union would throw a fit.

Dec 15, 2014 3:24 PM EST



MeasurementBlues

Magflux,

Have you ever talked to a teacher about this?

I don't think this has anything to do with teacher unions. It could be school administrators and some school principals who tell teachers to "teach to the test." They do it to make themselves and their districts/schools look better. I believe that many teachers and school principals feel that the standardized tests get in the way of real teaching, as in teaching students to think.

Dec 15, 2014 5:22 PM EST

mklemes

It should be obvious that "teaching to the test" and teaching "only facts" are not the only choices. The point is to teach useful facts and the ways to use them to solve problems, and to derive new information to use as tools to solve more advanced problems. That takes more pedagogic skill, both to teach and to test it, but people always look for simple answers. There are no shortcuts; just do the work!

Dec 9, 2014 9:52 PM EST