

Five habits of great students: Lessons from top-ranked STEM school

By Valerie Strauss , Updated: February 20, 2013

Many factors affect how well students do in school, but among them are how the students themselves approach their work and learning. Here are some of the habits of successful students at High Technology High School in Lincroft, New Jersey, which was ranked the [#1 STEM high school](#) in the nation by U.S. News last year (for those who think rankings have any value). This was written by Jonathan Olsen ([@jonathanaolsen](#)) and [Sarah Mulhern Gross \(@thereadingzone\)](#), who team-teach an integrated humanities program to ninth grade students at High Technology. Jonathan and Sarah are [regular contributors](#) to the New York Times Learning Network. **Jon , the district's curriculum coordinator, teachers world history; Sarah, a National Board Certified teacher,** teaches English. They have both been honored as Teachers of the Year by their school.

Students apply from 52 school districts in Monmouth County to enroll in the school and are selected based on academic records and performance on an entrance exam. According to U.S. News, the school has a 9 percent minority rate and 2 percent of students are classified as "economically disadvantaged."

By Jonathan Olsen and Sarah Mulhern Gross

When [U.S. News ranked](#) our high school as the best science, technology, engineering, and math (STEM) high school in the nation, our students were recognized as being the smartest students in the nation in the four cornerstone subject areas recently lauded by President Obama in his State of the Union address. Regardless of your feelings about high school rankings, we know that our school is filled with some of the brightest kids we'll ever come in contact with. Over the last two years, almost 30% of our graduating seniors attended Ivy League colleges, including the over a dozen alumni who are currently on Princeton's campus. These numbers don't include the many students accepted at prestigious schools like MIT, Stanford, and the University of California, Berkeley. With their high test scores, 100% college acceptance rate, and well-publicized #1 ranking comes a frequently asked question: Why are these students so smart?

It only takes a cursory glance to notice some of the traits that make them stand out. As our students finish their history quiz and pack up their pencil cases, they quietly settle into their seats and begin to read. Some take out novels, others large non-fiction tomes, and still others are paging through the newspaper. A student asks if he can work on a letter to Congress about genetically modified food instead of reading today. An upperclassman sneaks into the back of the room and silently picks through the classroom library shelves, wordlessly indicating that she is borrowing a book. A sophomore knocks on the door and asks if he can have a copy of the newspaper to bring to lunch. Nothing listed above is limited to gifted and talented students. They are habits that all students should be embracing and parents and schools need to foster at every grade level in order for the next generation to be successful.

The qualities many label as smart are actually learned habits, fostered by the parents, faculty, and administration who value them. How can schools and parents ensure that their own students are smart? We've noticed our students possess five habits that all children should be encouraged to pursue.

Read Early, Read Late, Read Often

School and parents need to foster a culture of literacy. Like many teens, not all students at our school begin freshman year as readers. But parents and staff model the importance of daily independent reading. Students are encouraged to bring books to every class and read in and out of school. Teachers across the content areas model reading by sharing their own favorites and talking about books with students. The freshmen share book picks with their biology teacher and the juniors swap book recommendations with their calculus teacher. She is even a part of the student-run book club! Even the most reluctant readers begin to buy into the excitement because everyone is reading. Teachers and parents need to make time for students to read for pleasure, in class and at home. For us, reading is the single most important factor leading to academic achievement. You can't be stupid and read a lot.

Write Daily

Students at High Tech are writers. Some write poetry and fiction outside of school, others are involved in drafting tech reports for internships or technology competitions. Regardless of their passions, they are encouraged to write extensively in school each day. The students write more than teachers can assess and in the process become comfortable writing in multiple genres and taking compositional risks. During freshman year, our students read the newspaper daily and respond to current events in writing. These daily essays are not graded in a traditional sense, which allows students to become comfortable as writers. In doing this, our students greatly improve both their critical thinking and writing ability. Parents and teachers need to provide students with opportunities to write without the pressure of an assessment each time. Encourage kids to write and they will become writers.

Line Up Your Pencils

"Be prepared" is the motto of the Boy Scouts but should be the motto for all students. Attitude is everything, and preparing to do your best will help you become the best. When our students took their midterms last week, you could walk into any classroom and see pencils lined up across the tops of desks. Exams and standardized tests are their Super Bowl. Instead of two-a-day practices in preparation for the big game, they read, write, and discuss topics from class. They pull together the materials they need and figure out the organizational system that works for them. They might be anxious and unsure of themselves before their game, or test, but they are as ready as they can be. If a pencil point breaks or an eraser smudges they are prepared with a backup. Organization is essential for these students; teachers and parents need to work with students to find an organizational system that works best for them. For us, it doesn't matter what they do, just as long as it works.

Collaborate With Others

Our students thrive when their courses become interdisciplinary. While the president spoke about the value of a STEM education we know he doesn't mean other courses are ignored.

In fact, great ideas often come out of humanities classes. In his 2005 [commencement address at Stanford](#) University, Steve Jobs talked about how one of the most important courses he ever took was on calligraphy. Jobs studied calligraphy for months after he dropped out of Reed College. He credited this class with instilling in him a love for aesthetics that any Mac user can appreciate.

History, English and foreign language teachers need to find ways to integrate their courses with math and science. Employers looking for engineers ask for strong writing and communications skills, while those looking for scientists ask for critical reading and thinking skills.

As we prepare our students for jobs that don't even exist yet, it becomes increasingly important that they see these connections between disciplines and understand that the world is one big, integrated place. Teachers and parents need to allow students to work together since that is what they'll be doing for the rest of their lives. Likewise, schools need to allow teachers to work together and explore the interdisciplinary connections between subject areas.

Question Your Teachers

Thinking outside the box is a cliché but certainly a reality for our students. They question everything—especially test questions they get wrong. This attitude is important because it shows a general inquisitiveness that is essential in learning. As any parent of small children knows, questions are a way to gain knowledge. Teachers can't be offended when a student asks a difficult question and parents should encourage this behavior. Over time we've learned to embrace difficult questions even if it makes us second-guess ourselves.

We've also learned to let our students find the answers to these questions since you never know where their search will lead them. Rather than hushing children who always ask questions, parents and teachers need to encourage this habit. Our best students ask the most difficult questions.

Smart is more than numbers and letters on a report card — it's a way of life. All students can be smart. As parents and teachers, we just need to provide them with the opportunities to shine.

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