Teaching high school math during the day, and two evenings a week helping community college students grasp arithmetic they should have mastered years ago, LaTonya Davis has some insight into the root causes of her older students’ deficiencies.

“Over the twelve years that I’ve been doing this, the performance of my junior college students has gotten worse,” Davis says.

Many of her “developmental math” students in community college balk at the three hours of homework she gives them weekly, Davis says.

“They think that they shouldn’t have to do homework because homework is not in their background,” she says. “If students aren’t doing homework assignments in math, science and English — that’s their foundation academically — the teachers who are teaching them should be fired.”

With that, Davis, a remedial math instructor at Tarrant County College, headquartered in Fort Worth, Texas, was just beginning her critique of why a disproportionate share of students land on campus unequipped to tackle course work that yields a professional certificate or two-year associate degree.

That’s a by-product of having attended secondary schools where homework wasn’t mandated and of living with parents who didn’t challenge that failing, says Davis. High schools — and junior high and elementary schools, for that matter — are supposed to prep college-bound students for the rigors of higher education, Davis continued. Instead, she said, too many K-12 schools are focused on ensuring that students pass standardized tests — because education funding is partly tied to test scores — but not on whether students actually understand the processes involved in reaching a correct answer.

Multiple challenges

Davis holds a master’s degree in electrical engineering and purposely traded a post as a corporate engineer
She was prompted by research on what American students do not know, and how students in other countries academically outpace those in the United States. American math and science students made strides in the most recent "Trends in International Mathematics and Science Study," conducted in 2011, but still trail when it comes to advanced math and science. Just 19 percent of eighth-graders in Massachusetts, the highest-performing U.S. state, scored at the advanced level on the Trends exams. That compared to roughly 50 percent of students in South Korea, Singapore and Taiwan. In science, 24 percent of students in top-performing Massachusetts and 3 percent in low-performing Mississippi reached the advanced level. That compared to 40 percent in Singapore, for example.

According to the National Math and Science Initiative, 45 percent of U.S. high school graduates in 2011 were prepared to handle college math courses, and 30 percent were prepared for college science. Those deficits show themselves most acutely at community colleges, says Steve Kappler, assistant vp president, career and college readiness and head of postsecondary strategy at the educational service ACT, Inc. Community colleges' rate of enrollment exceeds that of four-year universities, Kappler notes. Those who enroll in community colleges are more apt to confront daily realities that make getting a college degree harder: family responsibilities, financial need and workplace demands, according to educators. Often, community college students have attended some of the nation's worst-performing public elementary and secondary schools. They are too frequently not practiced in the kind of self-discipline and motivation that a start-to-finish college education demands.

That's a partial picture of the surging population of disproportionately under-par, unprepared students that community colleges are trying to shore up. Kappler says community colleges and their students need to collaborate fully on identifying desired goals for their education and careers and planning for how to reach them.

"The best colleges," Kappler adds, "pay attention and understand [students'] academic behaviors, which [research suggests] don't deviate much over time. If I don't know I'm a poor time manager, and I don't have the right tools, I'm not going to know how to address them. But if you understand all these things, you can overcome."

Community college students have much to surmount. Sixty percent of all community students were enrolled in remedial courses — also called developmental courses — based on a 2009 report from the Community College Research Center at Columbia University Teachers College. Beyond that 60 percent, the Columbia researchers wrote, "Many more are referred [to development courses] but never enroll."

In addition, the researchers said, "Most students referred to developmental education do not finish the sequences to which they are referred."

They recommended such reforms as offering developmental course instruction throughout the enrollment of community college students needing it, not just during their initial semester. Early, but not ongoing remediation, is the present norm.

Some community colleges have acknowledged the need to address the lack of academic readiness within student ranks, says Dr. Gerardo de los Santos, president and chief executive officer of the League for Innovation in the Community College.

His short list of community colleges on the cutting edge includes Sinclair Community College in Dayton, Ohio; Miami Dade College and Valencia College in Florida; and Austin Community College in Texas. Tactics at those schools vary from using technology to track and align student performance and career strategies or to measure outcomes and best practices for teaching in classrooms of students with multiple learning styles.

"I could go on and on and on with outstanding colleges that are trying to move the needle," says de los Santos, whose league is headquartered in Chandler, Ariz. "Those are just a few who are trying to do the hard work."

A former community college professor, he graduated Mesa Community College in Arizona, before eventually earning a Ph.D. in community college leadership from the University of Texas.

Among reforms community colleges have put in place is nixing a long-standing practice of having even cash-strapped community college students pay for remedial courses that do not earn them college credit.

A new start

Malani Smith, 19, a 2012 high school graduate of the Secondary School for Journalism in Brooklyn, N.Y., scored 60 out of 100 on the writing section and 96 on the math portion of the placement exam at Dutchess Community College in upstate Poughkeepsie, N.Y., where she starts classes in spring 2014 and will live on campus. Her schedule includes remedial English.

Writing never was her strong suit, says Smith. She owns up to not taking enough initiative to bone up on those skills. However, she also cites what she sees as a lapse at her journalism-based Brooklyn alma mater.

"My high school had one journalism course; they called it 'creative writing,'" adds Smith, who plans to be a forensic scientist and enroll at the State University of New York at Binghamton two years from now.

She is betting that Dutchess Community College's FOCUS, a reading, writing and study-skills remediation program for first-year students with academic profiles similar to hers, will rightly equip her to succeed in college.
According to Dutchess’ website, more than 86 percent of FOCUS students from the fall 2010 semester registered for the spring 2011 semester. (Columbia’s Community College Research Center reports that while there is scant information on semester-to-semester return rates at community colleges, its survey of just two community colleges, one in Washington State and one in Virginia, showed that 25 percent of students who attended in the fall did not return the following spring.)

“Community colleges are where the majority of students who are unprepared are enrolling,” says MaryAnn McGuirk, director of the human development program at North Lake Community College. “We have to be creative to help them get where they want and need to go.”

North Lake is one of seven campuses in the Dallas County Community College District. In 2009, McGuirk oversaw a revamping of North Lake’s required course on the how-tos of academic success. It was prompted by a sobering fact, McGuirk says. Too many of its students did not have the remotest understanding of the basics of college life, to say nothing of the academic rigor required for earning college credentials.

“We ask them how many credits it takes to get an associate degree because many of them aren’t even aware of that,” she says. “You’d be surprised what some people do not know.”

What had been a required one-credit course for new students, meeting for just an hour each week, was converted into a three-credit course clocking three hours of classroom time weekly. During that extended period, the freshmen — many of them the first in their families to go to college — explored study skills, the theory and psychology of learning, brain-based learning, emotional learning and a system of learning objectives.

“It pushes them deeper,” McGuirk says. “It lets them compare and contrast and understand the many layers of what it takes to get an education.”

Instructional methods and instructional content are key aspects of any discussion on how to assist lesser-performing community college students, says de los Santos. Equally essential to that discussion is the quality of teaching staffs that increasingly include part-time workers and others with subject matter and workplace know-how, but no training in the actual pedagogy of teaching.

“Professional development for faculty is absolutely paramount,” de los Santos says. “That cannot be lost as we change how we go about our work … and do more with less. At a time when more students are attending community college, college budgets are being slashed.”

Davis says she has been especially focused on how to put her largely African-American and Latino students into the pipeline for careers in the STEM fields.

An obstacle to that is the very standardized test that, for her Texas high school students, amounts to a “dumbing down of what we do in the classroom. How is it that a student can get 20 out of 50 answers correct and that be called ‘meeting the standard’?” says Davis. “How can we call that a passing grade? That is exactly what’s happening.”

In fall 2013, five of the 19 students in her remedial math class at Tarrant County College flunked, Davis adds. Half of the remainder barely made the grade.

“What we’re teaching in some high schools and in college don’t line up,” she says. “That’s the discussion we need to have but are not. That’s why so many college students are not ready.”

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