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REFORMING REMEDIAL MATH IN TENNESSEE

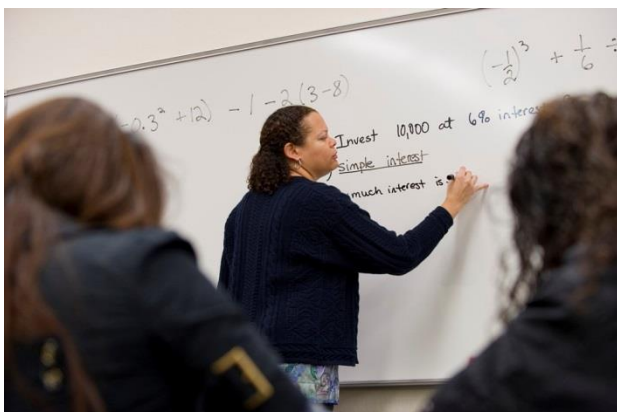
Every year, about seven in ten of the first-year students at Chattanooga State Community College arrive unprepared for college math and need to take remedial courses. But only half of those placed in developmental math return for their second year, and just 5 percent earn a credential or certificate in three years.

“If you come to college and are placed in developmental math, you’re doomed,” said Robert Denn, Chattanooga State’s dean of honors and academic support. “You’re just not going to finish.”

Chattanooga State is not alone in losing remedial students. More than 60 percent of students entering a community college must take developmental math, but 70 percent of them fail the course, according to the Carnegie Foundation for the Advancement of Teaching.

Even though students must pay tuition for remedial courses, they don’t get credit for them. But until they pass the remedial courses, they can’t finish their academic program, even if their field of study requires little math. “They don’t ever get out of that Bermuda Triangle,” Denn said.

In 2011, Chattanooga State decided to overhaul its remedial math program. College officials studied the attributes of their most successful students and found that many of these students took dual-enrollment courses in high school, earning college credit before enrolling at Chattanooga State.



Of those students, nearly all completed college.

Denn and his colleagues wondered if the successes of dual could be applied to struggling students needing remedial work. Could students complete the state math requirements in high school before arriving on campus?

The Tennessee Board of Education had recently approved a new requirement: all high-school students in the state had to take a math course their senior year. For those who scored below a 19 (out of a possible 36) on the ACT, the state board created a bridge math course.

At the same time, the Tennessee Board of Regents required colleges to redesign their remedial math program, which was renamed “Learning Support Math.” Although these requirements would overlap for many students, K-12 educators and higher-education officials started to work on putting them in place in isolation. “Another misalignment,” Denn said.

Chattanooga State faculty members wanted to design a single course that would align the various requirements to make it easy for students, teachers, and colleges to understand. From those discussions, the idea of SAILS (Seamless Alignment and Integrated Learning Support) was born.

SAILS consists of a bridge math course for high school seniors that incorporates the five competencies students must master for Chattanooga’s Learning Support Math. The course is a hybrid, a mix of online and face-to-face instruction. The self-paced program allows students to learn at their own speed, and teachers can work one-on-one with students who are struggling. If they master the five competencies early, students can move on to take college-level math classes for credit while still in high school.

The pilot class for SAILS started in the spring of 2012 at Red Bank High School, which already had a successful dual-enrollment program with Chattanooga State. That first year, of the 200 students connected to Chattanooga State, 83 percent met all five competencies in high school. A

quarter of the students then went on and earned college credit in their second semester of senior year. The next year Chattanooga State expanded SAILS to four community colleges and 600 students.

The expansion statewide the next year happened almost by accident. During the pilot class, Denn had made a presentation on the program to the Tennessee Higher Education Commission. Mike Krause was the commission's assistant executive director at the time and filed away the presentation notes. He was later tapped to head Gov. Bill Haslam's college graduation initiative. Krause was working to identify innovative, promising programs in higher education and remembered the SAILS presentation. He sent an e-mail message to Denn asking for a plan in 24 hours. Krause then presented the idea to the governor, who added a \$1.12-million grant for SAILS expansion in his budget. Within three months, SAILS expanded from 600 students to more than 6,000 students.

“This program changes lives. So many students thought college wasn't an option for them until they finished this program. And now, they're college students.”

- Jeannette Tippett, SAILS Regional Lead Field Coordinator

In 2013-14, SAILS served 8,175 students at 118 high schools and all 13 of the state's community colleges. Sixty-nine percent (5,656 students) of the students who took SAILS passed all five competencies and needed no remedial math when they enrolled in college. And 239 of those students had gone on to complete college math while they were still in high school. Another 81 percent (6,648 students) passed at least three competencies, equal to one semester of remedial math. From August to December of 2013, students saved 6,350 semesters of remedial math and \$3.5 million in tuition and books.

To Krause, SAILS sends a powerful message that resonates with students. “It's a confidence-boosting message that says ‘I'm getting ahead, not catching up,’” Krause said.

By fall 2014, the program was in 184 of the state's 318 high schools. Over 9,000 students are enrolled, and another 4,000 are expected to start in spring 2015. Those 13,000 students represent almost half of the state's 30,000 students who need bridge math courses, Denn says. The state grant has grown to \$2.45 million, which covers the full cost of the program. “We want to put learning support out of business,” Denn said.

Denn said that SAILS succeeded where many past efforts to reform remedial math failed because of the statewide changes to math requirements, the growing popularity of hybrid courses, and a governor willing to put money behind extending the idea statewide.



The key to the program, he said, are the field coordinators, who serve as the bridge between the community colleges and the high schools. Each field coordinator is responsible for seven to ten high schools. They are the eyes and ears of the program, visiting each class once a week or every other week to answer questions, motivate students, and keep an eye out for problems that need to be reported to the SAILS leadership team.

Most of the 25 field coordinators have experience in teaching in elementary or secondary schools, which gives them added credibility with teachers, principals, and guidance counselors. The on-the-ground field coordinators give a level of support not common in many other programs, said Jeannette Tippett, one of the two SAILS Regional Lead Field Coordinators.

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Student data from SAILS is housed on a centralized system, allowing officials to monitor progress in real time. Teachers can quickly track students in individual classes to see who is ahead or falling behind and could benefit from extra help. Field coordinators also use the data to compare schools.

Dave Pickering, a field coordinator who started with SAILS as a math teacher in the small town of South Pittsburg, said the most successful schools require students to pass all five competencies in order to graduate. At the beginning of the SAILS course, Pickering wrote letters to the parents of his students, explaining the course and the real financial benefit of it: if they pass, they won't have to take the class in college, saving them about \$1000. "That makes it real," Pickering said. His first year, of 30 students in his class, 17 finished by fall break in the middle of October. "The smallest incentive can have an impact," Pickering said.



In Pickering's second year, every single student finished by Christmas. Seventeen of those 31 went on to take a dual-enrollment math course second semester and graduated with college math credit. In his small school, that was over a third of the graduating class.

Technical difficulties are inevitable for a computerized program when schools don't always have good Internet

service or enough computers. Built into the second year of the SAILS grant was the purchase of a laptop cart and 20 laptops for each of the 13 community colleges to give to the school in its area that needs them most.

SAILS is in the planning states of a pilot course for remedial reading and writing for high school students. Krause does not know how much more the math program will expand—a program for students who didn't get the math education they needed earlier shouldn't exist forever, he said.

"SAILS is not only about Tennessee math competencies. It's about college-going culture and completion."

- *Robert Denn, Chattanooga State's dean of honors and academic support*

Denn and the SAILS team are now sharing what they learned with other states to help address the problem of remediation from a larger perspective. Their program has attracted considerable interest, and people will be watching to see what happens to these first groups of SAILS students and whether they do go on to finish a college degree.

"SAILS is not only about Tennessee math competencies," Denn said. "It's about college-going culture and completion."

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