

Miami Dade College Lays New Paths to Math Success

Sandra Beauburn is taking another shot at realizing her version of the American Dream.



Sandra - 33
Early Childhood Education

The 33-year-old Miami resident was born in Haiti, but has lived in Florida since 2006. Sandra previously attended Le Cordon Bleu College of Culinary Arts, but the restaurant business proved to be a poor match.

“I wanted to open my own business and be a cook, but I didn’t like it. I didn’t like the schedule, and I didn’t get to spend time with my daughter,” Sandra said. She decided to switch gears and is currently pursuing a degree in early childhood education at Miami Dade College. “I love children and the schedule that comes with (a career in) education. I want to be better, and I want to set a good example for my daughter.”

Miami Dade College is the largest institution in the Florida College System (FCS), serving 114,021 students during the 2017-18 school year, according to the Florida Department of Education.¹ The college opened in 1960, and its eight locations — Hialeah, Homestead, InterAmerican, Kendall, Medical, North, West, and Wolfson campuses — also combine to make it one of the largest colleges in the nation.

As part of the requirements for the Early Childhood Education degree, Sandra must complete six math credits. That means she’s forced to reacquaint herself with an old scholastic foe that seemingly has little to do with her chosen career path.

“My father was my math teacher once, and he made it very strict,” Sandra said. “I’m good at math, but I don’t like it.”

Despite her family’s mathematical pedigree, Sandra hadn’t taken a math class in well over a decade. To help make up for her time away from the classroom, Sandra enrolled in MDC’s MAT0029/MGF1106: Developmental Math for Statistics/Math for Liberal Arts I, an alternative to the traditional college algebra track. All of MDC’s MAT0029 sections are compressed and offered in an eight-week format followed by an eight-week MGF1106 college-credit bearing course in the same term, except when they are offered as six-week classes during the summer.

The first half of the 16-week term (MAT0029: Developmental Math for Statistics) is a developmental education course that functions as an overview of fundamental math concepts, allowing students to get their feet wet. The second half (MGF1106: Math for Liberal Arts I) is a college-level math course with credits that count toward students’ degrees.

“It’s good...it’s basic,” Sandra said. “It’s kind of a brush-up and review of everything you need to know.”

DEVELOPMENTAL EDUCATION REFORM — SB 1720

In 2013, the Florida Legislature passed Senate Bill 1720, which made developmental education optional for most students at the state's 28 Florida College System (FCS) institutions.

Before SB 1720, incoming college students were required to take a college placement test like the P.E.R.T. (Postsecondary Education Readiness Test), the ACT or the SAT. Students testing below the "college ready" cut-off scores were required to enroll in non-credit developmental education classes with the intention of getting the instruction and support needed to be successful in college-level coursework.

In 2012-13, over 138,000 students were enrolled in developmental math, reading, or writing courses at FCS institutions.² Given the open access mission of Florida's state and community colleges and the support many incoming students need, the passing of SB 1720 posed significant challenges for the administrators and faculty tasked with implementing the changes.

Researchers at Florida State University's Center for Postsecondary Success (CPS) conducted site visits to nine FCS institutions between October 2017 and April 2018 to study how SB 1720 was being implemented.

The study — Meeting the Needs of Students: Site Visit Report of the Fourth Year of Developmental Education Reform in the Florida College System — praised the institutions' efforts to "adapt to the FCS's diverse population of students and their needs."³ Miami Dade College is a Hispanic Serving Institution: the college's student population during Fall 2017 was 70% Hispanic, 14% black, and only 6% white.⁴

COLLEGES RESPOND TO REFORM

The CPS study also lauded campus personnel's "cycle of continuous improvement to promote student growth and development."

Courses such as MAT0029/MGF1106 have helped students like Sandra, who is pursuing a non-STEM major. MAT0029/MGF1106 can lead her and others through a successful math pathway that satisfies their degree requirements while avoiding a potential obstacle in the form of algebra courses they don't need for their majors. Students who want to take the developmental MAT0029 course at MDC must enroll in the college's compressed MAT0029/MGF1106 class.

Nicholas Schur, Chair of the Math Department at Miami Dade College's Kendall campus, said the school had begun to develop MAT0029/MGF1106 prior to SB 1720 being passed.

"We weren't totally influenced by the legislation, but the legislation did make the program happen faster," Schur said. "The scale of the program became much larger than what was anticipated at the very beginning."

SB 1720 also had an impact on the way the college presents MAT1033: Intermediate Algebra, a pre-requisite for college-level math courses.

"1033 has always been an elective credit course because it neither counts as a math credit nor as a dev ed credit," Schur said. "It's basically material covered in the high school curriculum, and it's kind of preparing students to be college math-ready."

Since recent high school graduates and active duty military personnel are no longer required to take college placement tests following the passage of SB 1720, Schur said many incoming students are electing to take MAT1033 versus signing up for a non-credit developmental education course.

"They are advised to take placement tests, but a lot of them don't because they have a phobia of taking a test that involves math," Schur said.

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In addition to implementing MAT0029/MGF1106 following SB1720, Miami Dade College "redesigned" MAT1033 with additional resources and streamlined processes.

"Since the course has a common syllabus for all the adjuncts, they also have common exams and common reviews. One of the benefits is that we can use our resources in an efficient manner," Schur said. "We also take tutors and bring them into the class for a more active learning approach. It's not pure lecture anymore."

Students can sign up for up to two non-consecutive hours of tutoring sessions each day. Schur said each session is capped at one hour in order to give students time to practice what they learn and come up with questions before returning for a potential second hour of tutoring.

"Most of the changes have involved adding resources, not changing what we teach," Schur said. "The actual material that we're teaching is exactly the same."

WHO BENEFITS FROM MATH REFORM AT MIAMI DADE COLLEGE?

Of the 2,515 students enrolled in MAT0029 courses at Miami Dade College during the 2017-18 academic year, the majority were Hispanic (70.1%), female (66.1%), and age 19 or below (54.8%).⁵

Marilyn Pimentel, a 19-year-old MDC student pursuing a psychology degree, was born in New York but grew up in the Dominican Republic. That means she has dreaded math in two different languages.



Marilyn - 19
Psychology

"In middle school, it (math) became more difficult and I think that was when I got more stressed out over math," she said. "When a professor is explaining a topic to me, I get it. But when I go do the exercise on my own or take a test, I blank out."

Marilyn enrolled in MAT0029/MGF1106, where she felt relatively at ease due to the variety of resources at her disposal.

"There's a website where you did your homework and assignments online," Marilyn said. "You learn the things you're doing wrong right away. I learned a lot."

The CPS study noted that “a significant feature of the [Florida College System] meeting student needs” involves providing help from a variety of campus sources.⁶

“In student success and first-year courses, or in tutoring environments in the learning centers, the college curricula aligned with student needs and learning objectives,” the study states. “These resources wed curriculum with academic support services to augment the overall support structure for students, particularly given preparedness concerns.”

Although the resources provided by MDC have been very helpful, Marilyn knows they aren’t enough to guarantee success. She believes it’s ultimately up to each student to put in the work and remain engaged.

“If you really want to do great, you’re going to make the effort to do great in your assignments,” she said. “If you don’t care, it doesn’t matter where you do your homework.”

A PERSONAL TOUCH TO HELPING ALL STUDENTS

The CPS study found that advisors, faculty, and other staff members have played a crucial role in informing students of their options following the passage of SB 1720.⁷

“We observed this personalized approach to student success at many institutions and among all personnel,” the study states. “The proactive approach to institutional problem-solving required that staff work to connect students with the campus resources that could help them be successful.”

Rafael Palacio is an academic advisor at MDC. In his 12 years at the college, he has also served as a tutor within the math department.

“I think we’re in a great place right now,” Palacio said of Miami Dade College’s standing post-SB 1720.

Palacio also noted that without a course like MAT0029/MGF1106, students who opt into developmental education would have to spend a semester or more trying to bridge the gap between their current math skills and what college requires them to know.

“We can take students straight from high school, close the gap for them, provide knowledge and assistance here in the lab, and help smoothly transition into a college course,” he said.

But Antonio Alonso, a math instructor at MDC for 16 years, is well aware that math-weary students in his classroom are an especially tough crowd to win over.

“It’s the subject that everyone loves to hate,” he said. “There is no one-size-fits-all solution, so the idea of having all these options works really well.”

References

¹Florida Department of Education, Division of Florida Colleges.

²Ibid.

³Hu, Shouping, Tamara Bertrand Jones, Rebecca Brower, Jamaal Harrison, Jenay Sermon, Hollie Daniels, Toby Park, and Christine Mokher. "Meeting The Needs Of Students: Site Visit Report Of The Fourth Year Of Developmental Education Reform In The Florida College System", 2018: 8.

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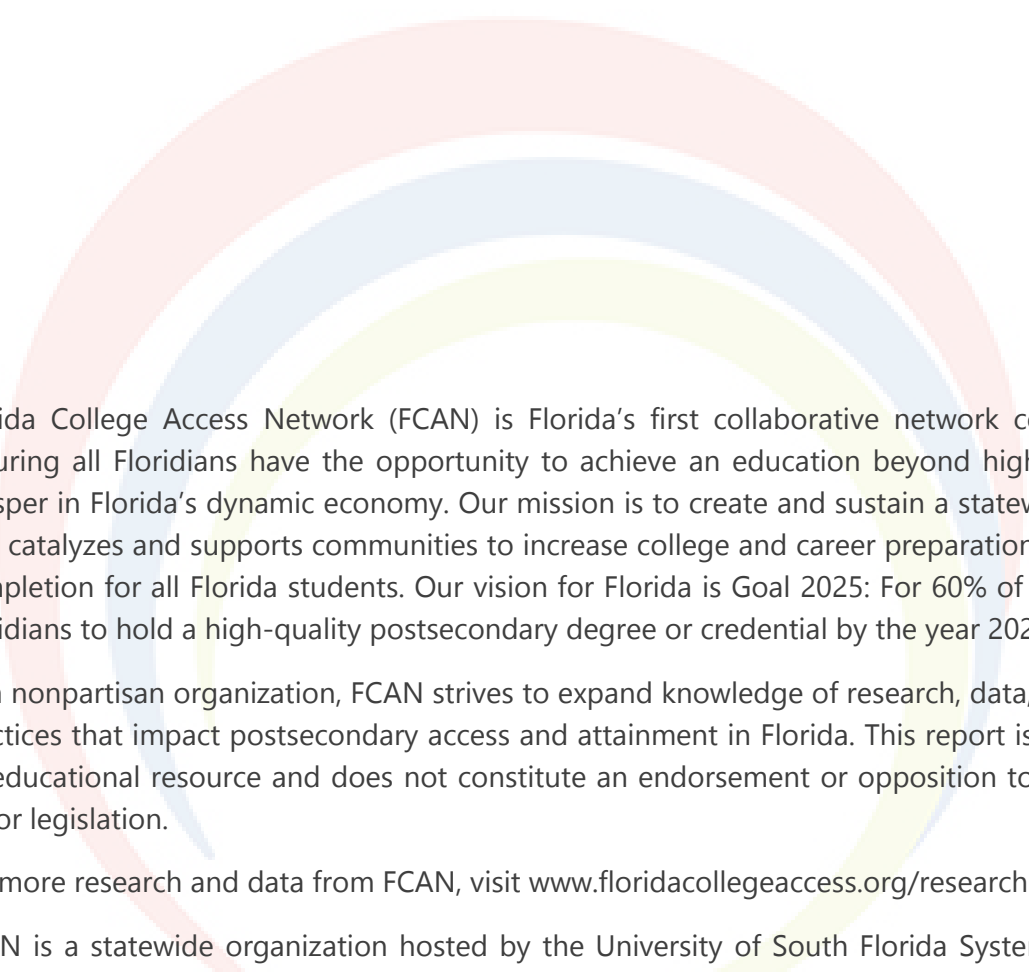
⁴College Navigator, "Miami Dade College". Washington DC: National Center for Education Statistics, 2018.

⁵Florida Department of Education, Developmental Education Courses, (EDStats Data Portal),

<https://edstats.fldoe.org/SASPortal/public>.

⁶Hu et al., "Meeting The Needs Of Students: Site Visit Report Of The Fourth Year Of Developmental Education Reform In The Florida College System", 19.

⁷Ibid.






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