

Leaving WHO HATES MIDDLE SCHOOL?

How Sarasota County Schools
Transformed the Way
Its Teachers Teach and Students Learn

Gulf Coast Community Foundation
Charles & Margery Barancik Foundation
Sarasota County Schools

Picture this:

A group of 30 seventh-graders sitting in six rigid rows of five desks each. Their teacher stands in front of an old-school blackboard explaining quadratic equations. Many students have their heads down, some even surfing the web or Snapchatting with friends. Others simply daydream, counting the minutes until the bell rings and they can go home.

Welcome to an all-too-typical middle-school classroom. Bored and disengaged students have no idea how a quadratic equation—or whatever else they're expected to learn—relates to their lives and dreams. They can't wait to leave after 6th period.

Now picture this:

A classroom where students learn by doing—researching real-world problems, teaching each other, and using state-of-the-art technology to do it. The students are *expected* to go online, drawing on the global resources of the Internet to boost their knowledge.

Their teacher moves among their work tables, coaching rather than lecturing. She keeps tabs on everyone's progress with a real-time dashboard on her computer, pivoting to give individual attention to small groups of students as they need it.

Education here is relevant, interactive, and engaging. Students come to class early and they don't want to leave. Welcome to Sarasota County's 21st-century, TechActive middle-school classrooms...

Six Reasons Why

Middle school. That turbulent transition from elementary to high school. Years that some adults with long memories still consider best forgotten.

But in Sarasota County, Florida, middle-schoolers have a different tale to tell. Many graduating eighth-graders say they *don't want to leave* their classrooms, or their teachers! Here are six reasons why:

- 01 Engaging Technology.** Most middle-school students have more technology on the phones in their pockets than they ever see or use in class. But in Sarasota County, middle schools have set a new standard for putting interactive technology at students' fingertips.
- 02 Real-world Applications.** Whether they are estimating irrational numbers or critiquing the philosophy of an ancient Indian emperor, students now understand how everything they learn in school relates in some way to their lives and their futures.
- 03 Working Together.** Sarasota County middle-schoolers work as teams in the classroom—just like they will in their future workplaces. And they love it!
- 04 Teachers as Coaches.** Gone are the days of stand-and-deliver lecturing. Sarasota middle-school teachers facilitate student-driven learning, and they can better monitor and intervene in each individual student's progress.
- 05 Immediate Feedback.** Instant, actionable information tells students and teachers exactly where they are and what they need to improve.
- 06 Community Support.** With businesses, volunteers, and philanthropists engaged within and beyond the classroom, Sarasota County middle-schoolers feel the love. They also see fulfilling career opportunities in their own hometown.

For students and their teachers in Sarasota County Schools, the reinvention of the middle-school experience is a dream come true. But it didn't happen overnight. This is the story of how two charitable foundations and a school district partnered to transform middle-school classrooms—and created a model for 21st-century learning in the process.



Start-Up: Making Math and Science More Engaging

Gulf Coast Community Foundation had a long history of investing grants in Sarasota County Schools. But in 2009, the increasingly data-driven, systems-focused foundation did a gut check. Gulf Coast's Board of Directors wanted to ensure that such significant funding **targeted the right issues** to have the greatest impact for students, **leveraged the foundation's other investments** in education, and **produced measurable results**.

Research showed that improving student achievement in science, technology, engineering, and math, or STEM, was critical for students and for the regional economy. Most of the fastest-growing, highest-paying jobs of the future would require significant STEM skills. Yet neither the region nor the state was preparing enough STEM-capable graduates. Florida sat in the middle of the pack nationally for math and science achievement. And the U.S. sat in the middle or worse internationally, trailing countries such as Lithuania and Slovenia.

Sarasota County Schools, meanwhile, had recognized that it must better prepare students for those innovation-based jobs of the future. The district wanted to make its math and science courses more engaging, more rigorous, and more relevant. With Gulf Coast and Sarasota County Schools looking at the same horizon, the foundation approached the school district with a plan.

Rethinking Everything

Rather than simply award a grant, Gulf Coast engaged teachers and principals from Sarasota County Schools and the neighboring Charlotte County school district as partners. In 2010, the foundation committed up to \$2.5 million over five years to co-create and implement an initiative that would jump-start STEM education in both districts.

Eventually branded STEMsmart, this wide-reaching STEM initiative had several objectives, multiple facets, and would touch middle and high schools in both school districts. However, the most visible and transformative investment—and the focus of this report—was the reinvention of the middle-school experience in Sarasota County Schools.

“Kids were begging us to help them learn. They were bored. They wanted to be the first in their family to go to college, and they knew what they were doing would not get them there.”

Page Dettmann, former Executive Director of Middle Schools, Sarasota County Schools





In partnership with Gulf Coast, Sarasota educators rethought everything about the school day:

Organizing and furnishing the classroom. Straight rows of desks gave way to horseshoe-shaped tables of four to six students that were spread throughout the room. Chairs on wheels helped students work together and use the large, touchscreen computer that anchored each table. Students and teachers even participated in design sessions over the summer, prototyping group tables with cardboard and weighing in on what worked best for them.

Integrating technology. Computers and tablets provided students access to each other's work and the unending resources of the web. Other technology like digital microscopes, cameras, and probes turned students into junior scientists as they worked independently and together on real-world problems.

What and how to teach. To engage students, teachers lectured less and coached more, facilitating student-led discussions and hands-on learning experiences.

Connecting the community. Within the classroom and beyond school walls, students learned from business partners and from volunteers who were recruited to share their real-world insights of math and science in action. Students also participated in new STEM summer camps, summits, competitions, and more.

The district dubbed the new learning environment TechActive Classrooms of Tomorrow. The partners evenly split the \$50,000 cost per room, with the district covering infrastructure and teacher training and the foundation funding technology and equipment. Initial plans called for retrofitting two math and two science classrooms at each participating middle school. But the innovative spaces and the activity within them quickly drew a stark contrast with traditional classes right next door, convincing the partners to think bigger.

"We encouraged our educational leaders to view this as a start-up with angel capital," recalls Mark Pritchett, Gulf Coast's president and CEO, who was vice president for community investment at the time. "If we hit a home run, then the stable funding would follow."

"Middle school is when students are first defining their pathways, deciding if they want to be science majors. It's important to get them excited early on."

Jeff Steinwachs, technology entrepreneur and Gulf Coast Community Foundation donor



EXTREME MAKEOVER

Gulf Coast Community Foundation and Sarasota County Schools shared costs to convert each traditional classroom to TechActive. The district footed infrastructure renovation and teacher training (\$25,000), while Gulf Coast and its donors paid for technology and equipment (\$25,000). The math and science classrooms include:

- ▶ Six group computer/lab tables with rolling chairs
- ▶ Six 23-inch touchscreen computers
- ▶ TI-Nspire wireless handhelds
- ▶ LanSchool classroom management software
- ▶ Digital microscopes, scales, and probeware
- ▶ Mobile presentation station and tablet computer (teacher)



Scale-Up: From Multi-School Pilot to District-Wide Revolution

Befitting an initiative that championed inquiry-based learning, STEMsmart evolved as an experiment itself.

"We didn't want an off-the-shelf program," says Gulf Coast's Pritchett. "We prototyped and tested to see what worked for our students and teachers."

The initiative partners also explored ways to truly engage community members in students' learning. Recruiting volunteers to serve as classroom speakers, STEM competition judges, and robotics-club mentors expanded student opportunities while raising STEM awareness in the community. But it was donor engagement that tipped the scales toward district-wide change.

"A Moral Obligation"

"Our donors were on board from the beginning," recalls Teri A Hansen, Gulf Coast's CEO at the time and now president and CEO of the Sarasota-based Charles & Margery Barancik Foundation. "As soon as we took them into one of these classrooms and they saw the flurry of meaningful learning taking place, they asked, 'How can we create more of these?' It became a moral obligation—every child needs this

opportunity. We would not let our students or teachers down."

With philanthropists willing to invest in additional classrooms, the partners planned for converting the rest of the math and science classrooms across the district's middle schools. Ninety-two rooms were scheduled for conversion to the TechActive format over the coming four years. Then, in 2013, a major challenge grant from philanthropists Charles and Margery Barancik greatly accelerated that process, and its impact.

The Baranciks agreed to match gifts dollar-for-dollar to fund the technology and equipment for each classroom. Whereas before it took a \$25,000 donation to effectively fund a new classroom, now donors could invest just \$12,500 to convert one thanks to the Baranciks' match. "Chuck and Margie's gift was transformational," says Hansen. "They helped us scale it faster than we ever could have scaled it."

"Donors lined up to double their philanthropic investment," adds Pritchett. "Sarasota middle schools soon led the country in district-wide technology deployment because of this technological and instructional revolution."



Changing the Culture

Philanthropic investments and School Board budget commitments secured the new classroom technology and the teacher training required to use it, but the central challenge to STEMsmart's success was changing the culture. Better meeting students' needs requires teachers and students to work in different ways. Technology, classroom design, and other infrastructure improvements can help, but first and foremost you need to change hearts and minds.



Some teachers perceived that they had to give up control and worried about what would happen if they weren't always standing in front of the room and delivering instruction. "It was all about developing trust and safety—having teachers recognize that it was okay to make mistakes as long as they learned from them," says Karen Rose, the district's current Executive Director of Middle Schools and previously a middle-school principal.

Students and teachers were a key part of the change process. "We looked at learning through the eyes of the kids," says Rose's predecessor, Page Dettmann. "We asked them, 'What would be the ideal learning environment?' They said: '1) Get teachers and their desks out from in front of the room. 2) Let us learn from each other and not just be talked to.'"

Teachers also could volunteer to have their classrooms converted first. These "early adopters" became the model, championing the new approach and helping their colleagues understand the STEMsmart technology and techniques.

Changing Back-Office Support

While teachers and students were transforming classrooms, the district adjusted its behind-the-scenes work. Investments in new technology and ongoing IT support were baked into budgets and procurement.

Professional development centered on providing teachers with the skills and confidence to both use the new technologies and, more importantly, rethink their approach to instruction.

Educators learned how to rewrite lesson plans to emphasize real-world problems; how to facilitate small-group discussions, so students learned to work with each other; and how to assess learning in real time, so they could support struggling students on the spot.

The school district also expanded its partnerships with other local philanthropies, companies, and nonprofit partners, providing students with additional opportunities to learn outside the classroom.



BEYOND THE CLASSROOM: BIG BANGS AND BUSTING MYTHS
How do you convince kids that science and math are valuable, fun, even cool? Hearing firsthand from a TV star doesn't hurt.

To supplement the new approach to teaching and learning, the foundation and school district developed an array of community-engagement opportunities. Schools expanded student clubs and summer enrichment programs. STEM summits put middle-schoolers on college campuses for whizbang workshops and spirited competitions judged by local business volunteers. The district forged a partnership with tech supplier Texas Instruments (TI) to train teachers. The foundation also feted hard-working faculty with year-end celebrations and technology prizes.

The partners leveraged some star power too. In 2012, Gulf Coast underwrote a free community presentation by Grant Imahara and Kari Byron, co-hosts of the Discovery Channel's hit program MythBusters. The hip and irreverent TV personalities showed students (and their parents) just how much fun—and success—could come from serious STEM skills. The next year, the district's robust partnership with TI's Education Technology division brought TI ambassador and Big Bang Theory star Mayim Bialik to town. Media coverage of "Amy Farrah Fowler" interacting with students in a TechActive classroom further raised the profile of STEM education in Sarasota.



Expansion: The Whole-School Model

As the initiative partners documented STEMsmart’s success through ongoing evaluations (see Impact section), philanthropists Charles and Margery Barancik had another transformative idea.

The Baranciks had already accelerated implementation of TechActive science and math classrooms across Sarasota County middle schools through their challenge grant. Now they asked: Could the same technology and teaching methods enhance learning in other disciplines, namely English language arts and social studies?

To answer that question, the newly formed Charles & Margery Barancik Foundation funded a pilot project to convert the remaining 30 non-science/math classrooms at Sarasota Middle School into TechActive classrooms. Sarasota Middle would become the first “all-TechActive” middle school in Sarasota County—or anywhere else, for that matter.

An independent evaluation of this pilot found that teachers incorporated technology into their lesson plans and moved toward project-based learning. As with early adopters in math and science, they also saw room and expressed desire for growth. “I’m only scratching the

surface because I’m just learning this stuff myself,” said one teacher.

Meanwhile, students largely reported that their new TechActive humanities classrooms made learning more fun, engaging, and interesting. They also saw the future relevance of the teamwork and collaboration skills they were learning. Eighty percent of students polled from the Sarasota Middle School pilot “agreed” or “strongly agreed” that the new English and social studies classrooms should be expanded district-wide.

21st Century Schools

In 2015, as the STEMsmart initiative wrapped its fifth and final year, Gulf Coast and the Barancik Foundation agreed to partner on its offshoot. Through the 21st Century Schools initiative, the two foundations would help fund 131 new English and social studies TechActive classrooms at seven more middle schools over the next three years. The effort would adapt technology and techniques being mastered through STEMsmart classrooms to the rest of the school. It also would include even more thorough evaluation to understand the impact.

As with STEMsmart, philanthropy would fund technology and equipment (\$25,000 per room), while the district paid for infrastructure and training. The Barancik Foundation agreed to cover 64 schools in the northern half of the county, while Gulf Coast picked up 67 in the south.

With the formal conclusion of these two initiatives, the partners have transformed more than 300 middle-school classrooms—and the teaching and learning that occur within them—across Sarasota County. The overall investment in education through STEMsmart and 21st Century Schools, including contributions leveraged from the school district and many donors, tops \$18 million.

But while the initiatives have ended on paper, they continue to thrive in the work of students and teachers. The district is integrating instructional strategies tested and developed in these projects throughout K-12 instruction. And, perhaps most essentially, the experience has forever changed the way the foundations and Sarasota County Schools partner to create systemic change.

“[T]he difference between learning in a traditional classroom and learning in a TechActive classroom is like the difference between looking through a wall and looking through a window.”

Eighth-grade student, Sarasota Middle School



WHAT THE TEACHERS SAID:
“There just seems to be a deeper collaboration with the kids and more conversation about the material.”

“I think it allows them to be more active learners, more engaged in the learning.”

“The students are constantly working together; they never work alone.”

“The kids surpassed our expectations, delivering a product so superior that we, the teachers, ended up learning how to better utilize the technology and resources available to us.”

Impact

Both STEMsmart and 21st Century Schools were independently evaluated by Robertson Consulting Group throughout the course of these initiatives. The evaluator also continued to interview students beyond the conclusion of STEMsmart, as they advanced in high school, to assess long-term impact. Some key findings from periodic evaluation reports are summarized below:

Students are more interested in STEM



more interest in STEM careers

more interest in technology



"The biggest thrill is to hear kids say things like 'learning is fun,' 'I like to be challenged,' 'I like finding information and doing something with it,' and 'I know I'm creative.'"

Administrator interview

Students recognize the value of collaboration and hands-on learning



prefer the team approach

feel TechActive classes are more "real life"

"Instead of waiting for me to give them information, they're starting to look for it on their own."

Teacher interview

Students are more actively engaged in their learning

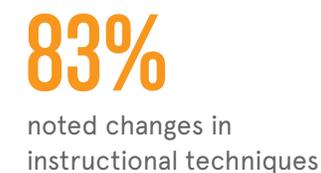
Teachers cited three ways the TechActive changes have increased engagement:

- Hands-on projects keep students' attention.
- Group work encourages participation.
- Students are more engaged in their own learning.

"When you're doing something that's fun, you're engaged. You want to do more of it, and you want to study, you want to work hard."

Student interview

Teachers can provide immediate feedback



noted changes in instructional techniques

"I recognize far quicker now who gets things, who doesn't, and who can mentor other students."

Teacher interview

Teachers transformed their skill sets

Teachers report that they:

- have additional instructional options
- are more efficient
- can better tailor instruction to individual students
- can better facilitate discussions rather than lecture

"After doing this for four years now, I don't think I could go back."

Teacher interview





Lessons Learned

The multiyear STEMsmart and 21st Century Schools initiatives yielded many lessons, according to project leaders. These insights might be valuable to other communities considering similar transformations.

- **Make it a partnership, not a grant.** Frequent meetings between foundation staff and school stakeholders can build trust and mutual support. “Not a single grant application was used in this endeavor,” says Gulf Coast’s Pritchett. “We agreed upon deliverables, timelines, and evaluation criteria in our meetings and held each other accountable by asking, “What can I do to help you achieve your goals this week?””
- **Listen to students and teachers.** Bottom-up reform is much more scalable and sustainable over the long term. “What kind of furniture? What does technology look like? When you ask students and teachers to dream big, they do,” says Middle Schools Executive Director Rose.
- **Start with teaching and learning.** Technology is an enabler, but changing mindsets and day-to-day behaviors is essential. “The gradual release of responsibility, changing the culture—that’s the revolution,” says former Superintendent White.
- **Be prepared to evolve and course-correct.** Use experience and ongoing evaluation for continual improvement. “Starting out, we never dreamed that STEMsmart and 21st Century Schools would look like they looked when we finished,” says Barancik Foundation’s Hansen.
- **Use early adopters to help bring along other educators.** Teachers, many skeptical of yet “another reform effort,” are much more likely to listen to their peers. “We identified forward-thinking teachers who were flexible, who wanted to learn, who weren’t afraid of technology, and who were willing to allow peers and the community into their classrooms,” says former Middle Schools Executive Director Dettmann.
- **Break down silos and invest in operational support.** Former Superintendent White says: “It is an initiative that has truly transformed instruction at the middle-school level and has set the district on a course that recognizes the complexity of this work and the requirements to sustain such a transformation.”

“When you ask students and teachers to dream big, they do.”

Acknowledgments

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Interview participants

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Karen Rose, Executive Director of Middle Schools, Sarasota County Schools
Jeff Steinwachs, donor, Gulf Coast Community Foundation
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Sarasota County Schools Teachers

All of the teachers who have transformed the way they teach in order to benefit their students deserve thanks for their commitment, courage, and care.

Sarasota County Schools Students

STEMsmart and 21st Century Schools were created for, but in many senses developed and improved by, our region's students. They are our future, and we are in good hands.

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CHARLES & MARGERY
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