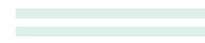




STARTSOLE - A STORY OF HOW PENNSYLVANIA IS EMBRACING PROJECT-BASED LEARNING WITH A FOCUS ON STEM EQUITY

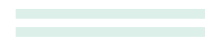
THE GOAL

The goal is to improve STEM-centered, project-based learning.



THE STRATEGY

StartSole uses self-organized learning environments to encourage students' creativity and exploration in problem-solving.



THE RESULTS

As of Spring 2021, more than 8,000 Pennsylvania teachers have already been trained on the StartSOLE platform with plans for continued rapid expansion and introduction to students.

2021

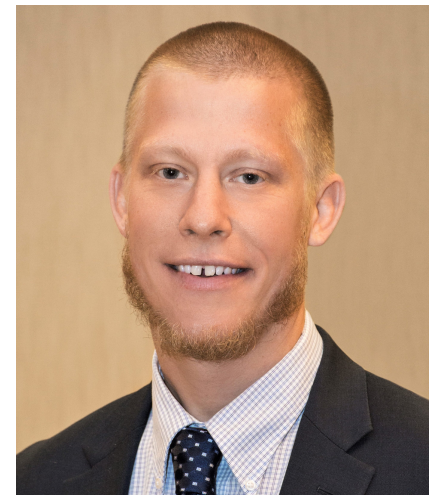




JUDD PITTMAN WAS LOOKING FOR A SOLUTION.

Pittman, a special consultant to the Pennsylvania Secretary of Education on STEM, was tasked with improving STEM-centered, project-based learning in the commonwealth. He'd convened Pennsylvania education stakeholders and partners to discuss STEM ecosystem growth, and was looking for new ways to provide high-quality core instruction to students in a way that focused on project-based learning.

Pittman already knew the benefits. Creative thinking, communication, collaboration and problem-solving skills all improve in students actively engaged in project-based learning. But Pittman also knew teachers are guided by, and come to rely on, their routines. There is a rhythm to teaching, a cadence, and with constant pressure to meet state educational standards, teachers like to script their classes.



Teachers are planners.

How then could Pittman encourage teachers to adopt project-based learning, an educational model that is by definition largely unplanned, in their classrooms? How could he show them that to realize the benefits of project-based learning, they would have to step back, to help facilitate discussion rather than lead it?

How could he convince a group of planners to stop planning?

That's when Pittman met Jeff McClellan and discovered StartSOLE.

WHAT IS START SOLE?

StartSOLE is a technology platform that facilitates teachers' use of self-organized learning environments (SOLEs), an educational approach designed to encourage students' creativity and exploration in problem-solving, with teachers acting as facilitators, rather than leaders. The platform provides teachers with a tool that seamlessly incorporates inquiry learning into the natural classroom environment, without need for extensive advance training, and accommodates any subject.

Pennsylvania Governor Tom Wolfe established three broad goals for those working in the state's government -- promote schools that teach, government that works, and jobs that pay. Pittman knew that STEM-based education sat at the center of those three goals, and he was drawn to StartSOLE because the platform helped reach the more specific mission to improve inquiry-based learning in Pennsylvania in a way that aligns with the state's STEM education standards.

Pittman was drawn to StartSOLE because the platform helped him reach his goal of improving inquiry-based learning in the state in a way that aligned with the state's STEM education standards.

McClellan, an educator himself who served as the first principal of the groundbreaking MC2 STEM High School in Cleveland, was drawn to the SOLE concept, but knew that most inquiry-based learning models are cumbersome and aren't readily suited for traditional class schedules. He wanted to create a resource that afforded teachers the benefits of project-based learning, but didn't disrupt their teaching routines.

Along with a group of researchers and educators, McClellan developed StartSOLE, a program designed to scale the SOLE process to manageable, single-class modules.

FOUNDER OF STARTSOLE AND BLENDED, BELIEVER IN ENGAGING LEARNING ENVIRONMENTS



JEFF MCCLELLAN'S CAREER - MUCH LIKE HIS PHILOSOPHY ABOUT EDUCATION - IS ANYTHING BUT TRADITIONAL.

MCCLELLAN, A FORMALLY TRAINED EDUCATOR AND RESEARCHER, IS A SERIAL EDUCATION ENTREPRENEUR, ALWAYS LOOKING FOR SOLUTIONS TO MAKE EDUCATION AND LEARNING ENGAGING. HE SERVED AS THE FOUNDING PRINCIPAL FOR MC2 STEM HIGH SCHOOL IN CLEVELAND, THE FIRST PUBLIC SCHOOL IN THE COUNTRY TO BE PARTIALLY HOUSED WITHIN A FORTUNE 500 COMPANY'S HEADQUARTERS. THE MC2 MODEL HAS BEEN CITED AS AN INNOVATIVE MODEL FOR EDUCATION AND USED AS THE INSPIRATION FOR STEM SCHOOLS IN EGYPT. FORMER PRESIDENT BARACK OBAMA NAMED THE SCHOOL AS AN OUTSTANDING EXAMPLE OF INNOVATION AND A MODEL FOR WHAT IS POSSIBLE FOR STUDENTS IN HIS 2014 STATE OF THE UNION ADDRESSES.

MCCLELLAN IS A BELIEVER IN PROBLEM-BASED LEARNING AND HIS WORK WITH START SOLE AS WELL AS BLENDED ARE SUPPORTING EDUCATORS AND STUDENTS ACROSS THE WORLD EXPERIENCE DEEPER AND MORE ENGAGED LEARNING.

EXPERIMENT SHOWS STUDENTS TEACH THEMSELVES

The SOLE concept was pioneered by Dr. Sugata Mitra, an education theorist who challenges teachers to become facilitators, giving students the tools they need to succeed, as they stand back and “watch the learning happen.”

In 1999, Mitra and his colleagues dug a hole in a wall bordering an urban slum in New Delhi and installed an Internet-connected PC and left it there. They installed a hidden camera filming the area. They observed children from the slum playing with the computer and, in the process, learning how to use it -- then teaching each other. These “Hole in the Wall” experiments demonstrated that, without supervision and formal teaching, children, who are motivated by curiosity, can teach themselves and each other.





BIG QUESTIONS

**STARTSOLE TEACHERS CHALLENGE
THEIR STUDENTS TO CONSIDER
PROFOUND QUESTIONS**

What is empathy and why is it important?

How is our environment changing?

How can we reduce waste in schools?

Every SOLE session starts with a “big question” meant to spark curiosity and debate in students. The teacher begins a session by introducing the big question, along with simple ground rules. Next, students collaborate in groups of three to four, researching the big question on one or two internet-enabled devices, for a set time, usually between 15 and 20 minutes. While researching the big question, each group prepares a creative presentation to share what they find with the rest of the class.

The groups then present their discoveries to the class. Presentations run no more than two or three minutes, but students are encouraged to use creativity - posters, skits, songs or whatever else students might choose. After each presentation, the class is encouraged to ask follow-up questions and make connections among groups.

HOW DOES STARTSOLE WORK?

Teachers can conduct StartSOLE sessions, from start to finish, in a single class period.

In addition, StartSOLE offers teachers an array of tools to assist them in the classroom, from a mobile app, to a lesson plan generator that adheres to state standards, to a wealth of information shared by a worldwide community of users. The mobile app offers a program timer and wireless projector, generates custom plans focusing on specific behaviors, and provides guided reflections to use after students complete their presentations. In addition, the platform offers synchronous videoconferencing, allowing teachers to conduct individual SOLEs virtually.

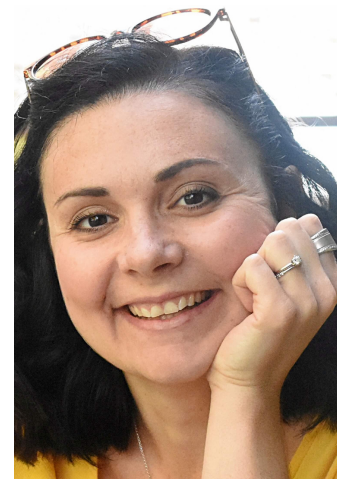
After Pittman connected with McClellan, he knew he'd found the answer. He knew many teachers in the state were unfamiliar with the SOLE concept as a means of promoting project-based learning, and the StartSOLE program was the ideal way to introduce the method to Pennsylvania classrooms without completely disrupting teachers' routines.

"It just seemed like a really good entry point to get educators comfortable with starting that gradual release of control in their classrooms to students, to become more student-centered and to build student agency," Pittman said.

More importantly, Pittman believed StartSOLE could help provide a foundation to improve the state's STEM education standards, which had gone more than 16 years without an update. Examining data from 127 different school districts in the state, Pittman knew there was a craving for more project-based and STEM learning initiatives in the classroom, and StartSOLE would satisfy that craving.

"It was going to take us one step closer to maybe pulling that trophy off the shelf."

"As a former Spanish teacher, I saw this as an opportunity to integrate a couple of different subjects at a time. It can be reinforced in all content areas, at any grade level. And the biggest thing that I love is the turnaround. I got it and I could use it tomorrow. It's very low prep." - Rebecca Gibboney, Coordinator of Professional Learning Blast Intermediate Unit 17 in Williamsport, PA



WHAT ARE THE BENEFITS OF STARTSOLE?

Through his work with McClellan, Pittman understands StartSOLE's benefits:

- **StartSOLE promotes critical thinking, evaluation, and collaboration skills among students.** The program benefits upper-level academic students by asking them to work collaboratively in an unstructured environment, and benefits lower-level academic students by assigning them specific roles and responsibilities within their groups.
- Although teachers may, at first, be reluctant to adopt StartSOLE as a new instructional model - and let go of some control over the learning process - that reluctance can soon be overcome by simply engaging the program. **StartSOLE's concise presentation lets teachers present meaningful inquiry-based learning modules in a single class period.** In addition, StartSOLE offers powerful tools, from an app to online content, to assist the process.
- And perhaps most importantly, **StartSOLE can be used as a means of engaging otherwise reluctant or uninvolved students by encouraging open collaboration, creativity, and individual roles and responsibilities within the collaborative group.**



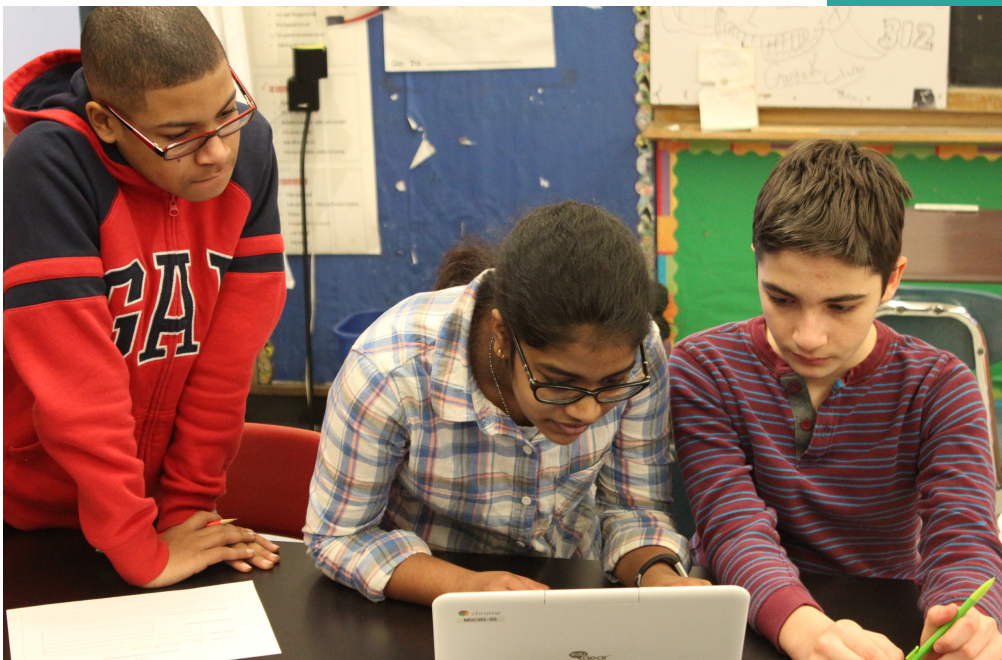
And McClellan knows StartSOLE works. He's already implemented the program in hundreds of other schools throughout the country, including the Vermilion Local School District, in Vermilion, Ohio. VLSD has encouraged its teachers to use StartSOLE in their classrooms for several years with great success, which McClellan and Pittman hope to replicate in Pennsylvania.

HOW DOES STARTSOLE WORK IN CLASSROOMS?

Allison Scullin is a sixth-grade language arts teacher at VLSD, and started using StartSOLE in 2016. She remembers a particularly compelling session with her students.

Scullin presented a StartSOLE to her classroom that started with the simple but profound question, “what is empathy, and how is it important?”

“IT WAS KIND OF A TWO-PART QUESTION,” SCULLIN SAID. “AND THE FIRST QUESTION THAT WE DID WITH THIS GROUP WAS ABOUT NATIVE AMERICAN CULTURE. WHEN WE SWITCHED IT TO SOMETHING THAT THEY DIDN’T KNOW ABOUT, THE PRESENTATIONS THAT WE GOT WERE REALLY UNBELIEVABLE. I MEAN, I WAS IN TEARS. THEY WERE IN TEARS. THEY JUST, THEY DID A REALLY NICE JOB BECAUSE THEY LEARNED THAT, THIS IS SOMETHING THEY ACTUALLY MIGHT CARE ABOUT.”





Scullin's students were creative in their presentations on empathy. She encouraged them to think outside the box, and she wasn't disappointed with the results. "Some of them put pictures on their slides, and some of them put videos on their slides. And they definitely started to show that they were understanding, 'that person is struggling right now, I'm going to help them.'"

Scullin was new to project-based learning and unfamiliar with StartSOLE when she arrived at VLSD, having come from a private school that used more traditional approaches. Although the approach was unfamiliar, it appealed to her right away. "We've all said we were kinesthetic learners," Scullin said. "And this gives them autonomy, it gives them ownership. Especially with sixth- and seventh-graders, it gives them responsibility. They don't want us on their backs the whole time."

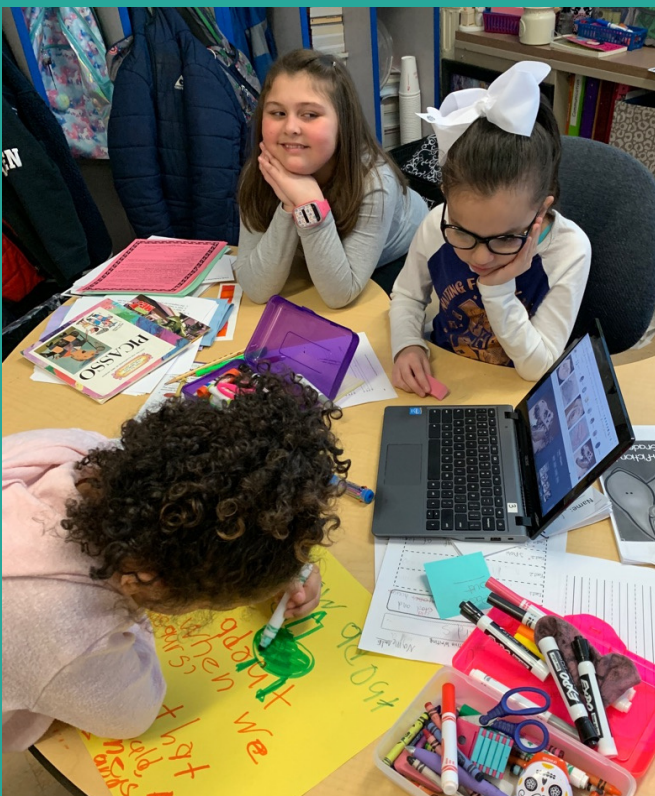
"IT SHOWS THE TEACHER THAT THEY ARE JUST AS IMPORTANT AS FACILITATORS AS THEY ARE IN FRONT OF THE CLASSROOM GIVING A LECTURE," SCULLIN SAID. "IT DEFINITELY SHOWED ME THAT YOU CAN TRUST OUR STUDENTS MORE, AND YOU CAN LET THEM TAKE STEPS WITHOUT YOU. THEY MIGHT TRIP, BUT THEY MIGHT NOT."

HOW IS STARTSOLE IMPLEMENTED?

In order to bring StartSOLE to classrooms, Pittman first had to teach the teachers. He had to introduce StartSOLE in a professional development setting, and explain to teachers how the program could benefit their classrooms.

Pittman, with McClellan's help, met with professional development leaders like Rebecca Gibboney, coordinator of professional learning in Williamsport.

Gibboney works with 19 school districts in four northern Pennsylvania counties near the New York Border. She's been using StartSOLE for the past year with educators in Pennsylvania to help them strengthen communication skills, instill creativity, promote collaboration, and reinforce critical thinking. Since August 2020, Gibboney has trained 423 educators, who have gone on to complete 718 individual SOLEs. She's also participated in the Global StartSOLE community virtually with SOLE Columbia.



This is to say, she knows what she's talking about, and she knew StartSOLE might be met with some initial resistance from teachers unwilling to deviate from their carefully-crafted routines.

"When I first started writing about it and talking to teachers and school counselors, they said, well, we already do things like this, it's just a research project," Gibboney said. "And then Jeff would talk to me, and we would discuss how it's important that the teachers stick to the timeline, because you're teaching the kids a process. It's not about the end product. It's about the process that they go through. It's almost like a way of thinking."

As of early Spring 2021, more than 5,000 educators in the state had been trained on StartSOLE's platform, with plans to continue training teachers to introduce the platform in their classrooms.

OPEN SYSTEM

StartSOLE is designed as an “open system,” without a centralized leadership structure. With open systems, each member has complete access to the system and is able to make direct use of it. McClellan and his team incorporated the open system concept into StartSOLE through its “ring” structure, allowing the platform to be scaled. Each “ring” is a group of educators using StartSOLE; “rings” are supported by common teams, each of which identifies a leader (or leaders) with access to summary data and metrics about the educators in the “ring.”

StartSOLE’s “ring” structure appealed to Pittman, who thought it meshed well with the state’s existing architecture.

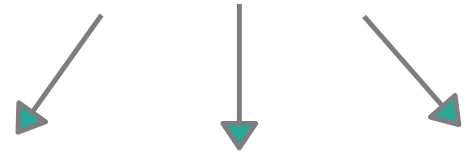
Pennsylvania’s public education system is home to 500 school districts.

The districts are grouped into 29 “intermediate units” -- regional governing bodies charged with implementing the state’s vision and educational standards, guiding curriculum development, and coordinating continuing professional development. Each IU, in turn, has appointed at least one STEM “point of contact,” whose job is to bring new STEM-based teaching platforms and tools to teachers within the IU. Teachers statewide are required to attend 90 days of professional development training per year. Of those 90 days, six are devoted to learning the StartSOLE platform. It is through this framework that Pittman is integrating StartSOLE into the state’s regular STEM education practices.

Pittman estimates that as of early **Spring 2021**, **between 5,000 and 8,000 teachers** have been trained on StartSOLE’s platform, with a continuing goal of training 200 new teachers per IU per year.



29 INTERMEDIATE UNITS



500 SCHOOL DISTRICTS



**5,000 - 8,000
TEACHERS TRAINED
BY SPRING 2021**

The “train-the-trainer” model works seamlessly with StartSOLE. Teachers use the platform as students themselves, working under the supervision of professional development coordinators standing in as instructors, before conducting in-class SOLEs with their own students.

Gibbony understands that teachers are sometimes resistant to focusing on process rather than results, where the results initially may be less-than-perfect.

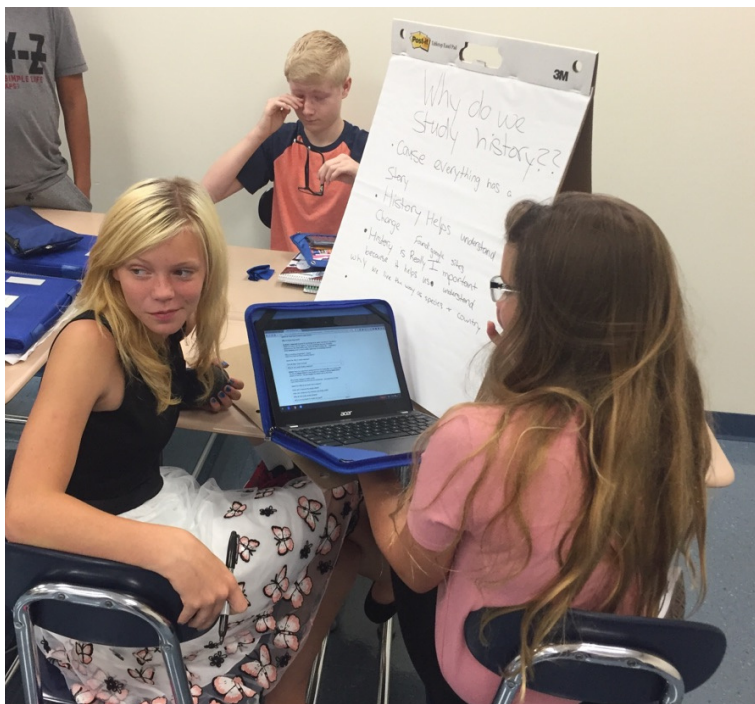
“ONE OF THE BIGGEST FEARS THAT TEACHERS HAVE IS, ‘I’M GOING TO LOSE TEACHING TIME,’” GIBBONEY SAID. “BUT THEY’RE NOT, BECAUSE [STARTSOLE] IS SO LEARNER-CENTERED, THAT SKILL CHANGES AND THE TEACHERS’ RELATIONSHIPS WITH THEIR OWN PEDAGOGY, AND HOW THEY TEACH CHANGES SO THAT THERE’S A LOT OF THOSE SKILLS THAT ARE REALLY EMBEDDED THAT THEY DON’T THINK ABOUT.”

Pittman also spoke with Chantelle Ney-Shaffer, an educational consultant in Pennsylvania’s Central Susquehanna Intermediate Unit. Like Gibboney, Ney-Shaffer is a professional development leader. And like Gibboney, Ney-Shaffer knew she had to convince teachers of StartSOLE’s benefits.

“I think it’s one thing we don’t let kids do enough, really think through things and realize that they are part of solutions,” Ney-Shaffer said. She believes StartSOLE can promote that realization in students.

“They can do this and we can have them working groups. Each member of the group has a different thing, value to whatever input they can give. And so it doesn't necessarily have to be the one speaking or the one doing all the taking of the notes, but that there's a place for each student in there for their own unique needs and that I'm a big, beautiful person.”

Ney-Shaffer said that although some teachers have been reluctant to adopt any new model during the uncertainty surrounding the COVID-19 pandemic, others have been quick to embrace StartSOLE as a tool.



“WHEN I DID THE TRAINING FOR OUR GIFTED TEACHERS, THEY WERE REALLY EXCITED ABOUT BEING ABLE TO TAKE IT BACK TO REGULAR TEACHERS,” NEY-SHAFFER SAID. “THEY FEEL IF THEY CAN GIVE THIS PROCESS TO REGULAR ED TEACHERS AND START WORKING ON INQUIRY-BASED EDUCATION, NOT ONLY THE GIFTED STUDENTS BENEFIT, BUT ALL STUDENTS WILL BENEFIT. WE’RE JUST IN OUR INFANCY [IMPLEMENTING THE PROGRAM], BUT THEY WERE EXCITED ABOUT BEING ABLE TO TAKE IT BACK AS A TOOL FOR OTHER TEACHERS WHO HAVE STUDENTS AND CONTINUE TO CULTIVATE THOSE COLLABORATIVE SKILLS WITH CRITICAL THINKING.”

Gibboney and Ney-Shaffer continue to implement StartSOLE in their districts, and both look forward to a bright future.

“What I’m hoping for personally is I would eventually like these to be used in the community,” Gibboney said. “It doesn’t have to just be in the classroom. You can use this for church groups. You can use this for after school programs.”



IN A DOWNTOWN CLASSROOM

Judd Pittman is in a Downton classroom full of sixth-graders. He's asked to see StartSOLE in action. But the students' teacher, who has more than 20 years of experience and was not prepared for Pittman's visit, is uncomfortable. She expected to make a short presentation on StartSOLE, but didn't anticipate running a live program. Although the classroom is furnished with slate lab tables, she's let the students rearrange their chairs in groups. The students begin the program. They ask the big question. They meet in groups, research the question. And they make their presentations.

Three years have passed, and what Pittman remembers most about that visit is the students' pride in their ownership of the work they did. "They were very proud of their foray into research, and doing their presentations. And to see the excitement from the kids, and they really did have fun that day, it was a bucket-filler for me."

HOW HAS STARTSOLE CHANGED THINGS?

In 2018, Pittman traveled to the Downingtown Area School District, where McClellan was helping to implement StartSOLE locally. Pittman spoke with experienced educators, some of more than 25 years, who at first were reluctant to change practices that had served them well. But after hearing McClellan speak, many changed their thinking. Pittman observed teachers using StartSOLE in their classrooms and asked for their feedback.

“THEY WERE SUPER-HONEST,” PITTMAN SAID. “THEY SAID, YOU KNOW, I’M 25 YEARS DEEP, AND I’M NOT INTERESTED IN CHANGING MY PRACTICE. BUT THIS WAS SOMETHING THAT REALLY MADE [THEM] THINK ABOUT CHANGING.”

“EVERYONE I TALKED TO, TO A TEE, HAD THE SAME RESPONSE,” PITTMAN SAID. “IT WAS JUST SO POIGNANT, BECAUSE THEY SAID ‘THIS ISN’T HOW I GENERALLY DO BUSINESS, BUT THIS IS HOW I WANT TO DO BUSINESS, AND I WANT TO LEARN MORE.’”



Pittman was impressed with what he heard. “What we saw that day was [the teachers] being vulnerable enough with their students to relinquish some of that control, to try something new.”

By the end of his visit, Pittman knew that even reluctant teachers could use the StartSOLE platform to meet the state’s goal of improving project-based STEM learning in Pennsylvania.

Pittman knows StartSOLE needs to be part of Pennsylvania’s education future.





StartSOLE

To learn more visit www.startsole.org