



Anytime, Anywhere Instruction:

McAllen ISD Students Take the Lead on Learning with Mobile Devices



Executive Summary

Customer Name: McAllen Independent School District
<http://www.mcallenisd.org>

Industry: K-12 Education

Location: South Texas

Number of Users: Nearly 3300 employees, more than 25,000 students on 33 campuses in:

- 20 elementary schools
- 7 middle schools
- 3 traditional high schools
- 2 nontraditional high schools
- 1 disciplinary campus

In 2009, in a remote corner of her school’s library, Stacy Siebert Banks had a wakeup-call. Siebert Banks, who teaches world history at McAllen Memorial High School, had just assigned her class a research project. Her students were clustered around the library’s laptop computers, attempting to get online to complete the assignment.

But with a slow server and overtaxed network severely limiting their access to information, several students had become frustrated. Siebert Banks discovered a trio huddled around a cell phone (then a forbidden device on campus). When she asked what the students were up to, they first attempted to conceal the phone, then admitted that they had been trying to log onto the required websites. “Suddenly it struck me: My kids were actually hiding their learning from me,” Siebert Banks says. “It broke my heart.”

That evening, Siebert Banks texted Principal Rosie Larson and repeated the story. She advised Larson that she no longer intended to impose the ban on cell phones in her class, and in fact, she wanted to find a way to use them for instruction. In response, Larson surprised Siebert Banks by asking her to develop protocols and guidelines for the integration of Internet-enabled mobile devices into the curriculum at the school, and share her findings with her peers.

Three years later, McAllen Independent School District (MISD) is in the final phase of a deployment of mobile devices to all 25,000 of its K-12 students. The devices are central to the district’s *Transforming Learning in the Classroom, Campus and Community* initiative, or TLC³. Leveraging a challenge-based learning model and supported by innovative technologies and a robust networking infrastructure, TLC³ has sparked dramatic levels of engagement for students and teachers, who now share equally in the teaching and learning process.

“It’s about transforming learning by bringing together cutting-edge instructional technology with student-centered, inquiry-based learning, focusing on rigor in teaching and learning, and simultaneously leveraging all resources: the classroom, the campus, and the community,” says District Superintendent James Ponce, Ed.

Preparing Students for Success

McAllen ISD is located at the southernmost tip of Texas, in the Rio Grande Valley. In the 1980s, new manufacturing and technology operations began to supplant the agricultural businesses that had driven McAllen’s economy for decades. Today, 91 percent of MISD’s students are Hispanic, 27 percent are limited-English speakers, and a full 67 percent are considered at-risk.

Despite these challenges, MISD has a globally recognized, advanced academics program. The district offers an International Baccalaureate Programme that provides students with a rigorous curriculum set to global standards, as well as a number of college-level programs that enable high school students to graduate with associate degrees, and up to 60 college credit hours. For the years 2009-10 and 2010-11, the McAllen district was cited with Gold Performance Acknowledgements for College Readiness from the State of Texas.

McAllen's journey from rural outpost to educational leader took a profound leap forward with the hiring of Dr. Ponce. When he arrived in McAllen in 2009, he was able to leverage the district's commitment to fully prepare all students (regardless of socioeconomic status) to assume a role in the workforce. "We started asking questions about whether we had the right environment in place that would enable us to facilitate the acquisition of 21st-century skills," Ponce says. "We realized that in order to move forward quickly we had to look at making investments in technology, and define the ways in which we would use technology districtwide."

Former Standard Restricts Technology Access

Prior to Ponce's arrival in MISD, the technology standard had been three desktops, a document reader, and a computer projection system per classroom. A few pilot programs using various mobile devices had been launched throughout the district: In one instance, a group of students received iPod shuffles, which enabled them to listen to audio content recorded by teachers, as well as audiobooks and student-created content. Another pilot saw the distribution of iPod Touch devices to 200 ninth-graders, who used the camera feature to produce videos and capture lectures. And in a third program, all students and teachers at an alternative high school received laptops.

"We looked at how students were developing and accessing content, and determined that if we wanted to give all students equal access, we'd have to provide everyone with a device of some type," says Carmen Garcia, director of instructional technology.

"I always kept in mind three things: the kids, our schools and our teachers. Every decision we make ... we have to understand how it's going to affect the children."

Hilda Garza-DeShazo; President, McAllen School Board, McAllen Independent School District

Dr. Ponce's hiring coincided with the district's renewal of its long-term strategic business plan. Soon after joining MISD, Ponce interviewed all district administrators to help establish key objectives. One of the most consistent themes that he heard was the difficulty in keeping up with the demands for

technology in the classroom. "Dr. Ponce believes that every child has to have the same opportunities," says Rachel Arcaute, the district's assistant superintendent for instructional services, and a 33-year veteran of MISD. "We talked about the fact that we could continue to put three computers in every classroom. But that would severely limit the number of students who would have access to technology resources."

Mobile Devices Make 1:1 Learning Affordable

As Ponce, the Tech Cadre Team, and the Board of Trustees began to chart their long-term vision, they evaluated the feasibility of a one-to-one learning program (providing a laptop computer for each child), looking at price, durability, reliability and user-friendliness. They concluded that the distribution of mobile devices (such as tablets, smartphones, or media players) offered far more promise than the one-to-one model.

"Cost was a major consideration with the laptops: They're expensive, and once the warranty runs out, you're stuck with old technology," Garcia says. "Also, you have to purchase the software, cover the maintenance, and deal with the battery life. It's not a sustainable model. Mobile devices, such as the iPad and iPod Touch, are much more affordable. And the fact that there are so many educational applications available for mobile devices made the difference in our selection process."

Digital Content Delivery Frees Funding Sources

Once MISD administrators made the decision to move forward with the TLC³ framework, they leveraged a number of funding sources to purchase the first supply of mobile devices and the networking infrastructure needed to support them. Close to 90 percent of the funds (US \$3.5 million+) came from the Federal Communications Commission's E-Rate program, along with the American Recovery and Reinvestment Act of 2009. Additional funding became available through the shift to digital content, which yielded savings in textbooks, storage and inventory requirements, and man-hours.

"Typically we would spend \$6 to \$8 million per year on technology," Garcia says. "When you look at digitizing all of the printed materials you use in grades K-12, the cost savings are unbelievable."

Cisco Partnership Powers TLC³

The simultaneous deployment of thousands of wireless mobile devices required an enormous amount of planning and retooling of MISD's network infrastructure. In this effort, Network Services Manager Patrick Karr says that Cisco's advice and expertise were invaluable. Karr has been with the district for 17 years, ever since the first Cisco switch was installed.

“We needed a managed wireless solution to make this all run, and we needed to ‘change the game’ very quickly,” Karr says. “The idea of supporting 25,000 users with a staff of 20 could seem like a losing battle. But Cisco has been excellent at providing the information we need, and ensuring that we put the right pieces in the right places. It’s a huge management chore to balance the loads going to all of our access-points. The intelligence of our Cisco solution does that for us, while providing redundancy and failover insurance.”

Cisco ISE Enhances Infrastructure Security

MISD’s wireless infrastructure now has security and encryption protocols, courtesy of Cisco® Identity Services Engine (ISE). This context-aware, identity-based platform enables the enforcement of compliance, enhances infrastructure security, and streamlines service operations. Cisco ISE offers these benefits:

- Security: Improves visibility and control overall user activity and devices on a physical network and virtual infrastructure
- Compliance: Creates consistent policy across the infrastructure for corporate governance
- Efficiency: Increases IT staff productivity by automating labor-intensive tasks and simplifying service delivery

Preparing for BYOD

Though the first phase of MISD’s mobile deployment featured exclusively Apple devices, Karr predicts that a “Bring Your Own Device” (BYOD) environment could well be in the district’s future. Thus, MISD looked to Cisco to create a network solution that would support any device brought onto campus.

“We understand BYOD is coming, so we’re trying to ensure that our solution is agnostic,” Karr says. “And then there are the unknowns; the changes in technology that haven’t even happened yet.”

“Our routers, switches, filters, VPN; they’re all Cisco. This end-to-end infrastructure ensures that we can make changes and scale as quickly as we need to.”

Patrick Karr, Coordinator for Network Services and Support
McAllen Independent School District

MISD uses Cisco ISE to deploy security and encryption protocols, and manage the overall mobile experience. Also, with mobile device management application AirWatch, Karr and the IT team can swiftly and securely deploy new mobile apps as needed. “By distributing the mobile devices, we’re leveling the playing field for all students’ instruction,” says Karr. “And now it’s so much easier to push out new applications and manage those devices, which is made possible through the integration of Cisco and AirWatch.”



Cisco Technologies in Use at MISD

- Cisco ASA 5500 Series Adaptive Security Appliances (providing VPN services and Internet edge security)
- Cisco IronPort® Web Security Appliances
- Cisco Nexus® 7000 Series Switches
- Cisco Catalyst® 3750 Series Switches
- Cisco AnyConnect Secure Mobility Client 2.5.x for Android
- Cisco Aironet® 1600 3502e Wireless Access Points, Cisco 5508 Wireless LAN Controllers, Cisco Wireless Control System, and Cisco Prime Network Control System
- Cisco Unified Computing System™ (UCS®) 5100 Blade Server Chassis, Cisco 6100 Series Fabric Interconnects, Cisco Unified Computing System B440 M2 High-Performance Blade Server
- Cisco Identity Services Engine 1.1.1; Cisco ISE Servers (for policy enforcement, monitoring and administrator)
- Windows 2008 server (for certificate authorization)

Teacher Cadre Advocates Initiative

In March 2011, McAllen District launched TLC³ with the creation of a cadre of teachers who would serve as advocates and peer mentors within their respective schools. Ten tech-savvy teachers were selected at each of 14 elementary, middle, and high schools. “We chose teachers who were chomping at the bit to make something happen, and we had a few who were skeptical, too,” Ponce says. “We considered them our ‘fire-starters’; we wanted this model to go viral among the teachers, and be very organic.”

The instructors came together to discuss the challenge-based learning model, and to plan ways in which they could integrate mobile technologies and connectivity into their curricula. Neighboring Abilene Christian University (renowned for its work with instructional technology) also became a partner in the discussions. That spring, a total of 6500 iPads were distributed to the instructors’ students on the 14 campuses. All cadre members also received an iPad for their own use, and were encouraged to experiment with the devices during summer recess.

During the same timeframe, the MISD Board of Trustees and Ponce began a series of public forums about TLC³, in which they addressed the business community, service clubs, families, and other audiences. The district also began sending out regular press releases, and leveraged email and social media to communicate key milestones and wins to the local community.

One of the most successful forums staged by MISD was a breakfast meeting held in November 2011 with 300 of the city’s most prominent leaders. “Our graduates are going to be competing for jobs and business in a global economy driven by technology,” McAllen Economic Development Corporation President/CEO Keith Patridge said at the event. “If they don’t have the ability, not just to use technology, but to exploit technology, they are going to have a tough time. I want us to be a leader in technology; to be on the front end, versus the back end.”

At the same event, McAllen Chamber of Commerce President Steve Ahlenius commended MISD on the TLC³ framework, saying, “It’s going to position this community and attract people in ways we haven’t even imagined yet, which will give a significant competitive advantage to McAllen: If you have a world-class school district, people are going to want to come to this community.”

Dramatic Changes Within Days

Within days of the initial iPad deployment, teachers began to report dramatic changes in their classrooms: They saw a spike in student engagement, and a willingness by students to take charge of their own learning. “The very first day we handed out the iPads, the students went crazy,” Arcaute says. “They immediately started working on projects and finding websites, and saying ‘hey, look what I can do!’ It was amazing.”

“It was like the floodgates in everyone’s brains were suddenly opened,” says Oneida Tamez, a fourth-grade teacher at Rayburn Elementary School. “We were doing a project, and my students were able to ask questions and find the answers right on the spot. Before, I had to do all of the work...so this was so exciting for them, to be able to explore on their own.”



Sandra Guerra, who teaches seventh- and eighth-grade math at Michael E. Fossum Middle School, asked her classes to create a monthly budget using their iPads. Students were required to total expenses, determine whether their assigned “salaries” would enable the purchase of houses and cars, compute mortgage payments and more. “Their research was so much easier; it’s all at their fingertips with their iPads,” Guerra says.

“The big difference is that I don’t have to guide my students; I can say ‘whoever figures this out can teach the whole class.’”

Sandra Guerra, Mathematics Teacher
Michael E. Fossum Middle School

Guerra’s colleague across the hall is Carol Ann Allen, International Baccalaureate coordinator and eighth-grade language arts teacher. When students finished their budgets in Guerra’s class, Allen asked them to summarize their research and their findings in essay form. “I graded them on their research, how they cited their sources, and how credible those sources were. The whole project was so empowering; our students absolutely love working this way.”

Dynamic Apps Engage, Excite Students

Though a number of families in McAllen lack Internet access at home, students can still work on assignments on their mobile devices when school is not in session. The iPads come pre-loaded with Apple’s iLife digital media suite, enabling work on presentations, videos, and other projects.

Along with the iLife applications, MISD teachers employ several other apps in their classes. Through Edmodo (a secure social networking application for students and teachers), Allen and her students stay in contact with each other. “I post the homework assignments there, and then students can send notes to me and to their peers if they’re having trouble with something. People are communicating and collaborating with each other 24/7, in ways that were never possible before,” Allen says.

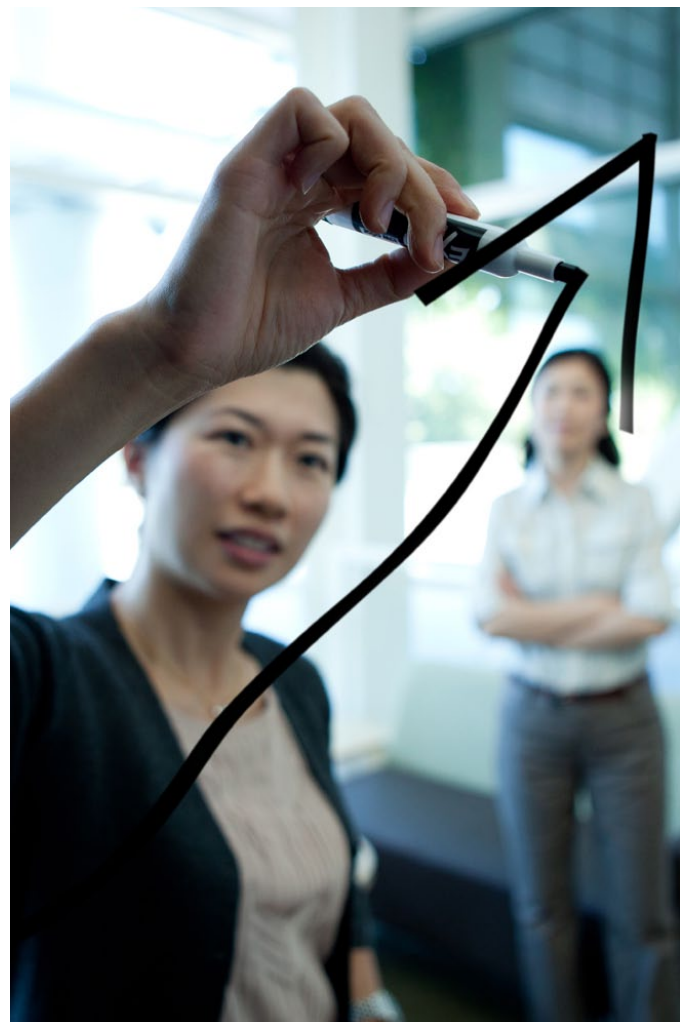
Siebert Banks relies on Socrative (a student response system) for online testing and assessments. The product helps enable Banks and her students to enter a “virtual classroom” together, where students can take a test that is either timed or self-paced. Testing can be done on any smart device; students simply enter the “classroom” number and sign on. “When I close the activity, I receive a report with everyone’s name and grade on it, so I can quickly see who’s progressing and who needs extra help,” says Siebert Banks. She also employs Keep and Share, a free online calendar, to help students keep track of important dates, and Flashboard (another free app), which helps enable speedy flashcard viewing.

Learning Now a Collaborative Process

As MISD students began working with the mobile devices, Siebert Banks and her colleagues were also experimenting with and devising an exciting, new, technology-infused curriculum. All agree that the use of the devices has dramatically changed the teaching and learning model throughout the district.

“When you teach this way,” Siebert Banks says, “you’re getting away from the need to be center stage; you become a facilitator of learning, versus holding all of the knowledge. Your kids become accountable, so they get into what helps them learn...and then you can focus on the students who need you the most. What’s great about that is that, since the learning is shared, I no longer go home exhausted; I’m unburdened.

“My students are engaged in a huge way, and really interested in learning now,” Siebert Banks continues. “The mobile devices enable anytime, anywhere learning, and you can find out what a child needs and provide the necessary tools. That’s a big part of teaching and motivating kids, and a glaring difference in the way we did things before.”





Entire District Mobile Soon

By the fall of 2012, every MISD student (more than 25,000) in grades pre-K through 12 will have his or her own mobile device. Students in pre-K through kindergarten will receive an iPod Touch, and 1st- through 12th-grades will be given an iPad2. Parents may opt out of the program altogether; as a substitute, the district will provide books and other materials.

To make sure that teachers continue to have optimum support as they transition to the new teaching and learning model, professional development will be offered daily in all schools during campus planning periods. The state requires districts to provide one conference period each day to all teachers. McAllen ISD provides two, helping ensure that educators are analyzing data and learning every day. "We're changing our staff development so that it's embedded into everyone's jobs," Garcia says.

A Future with No Limits

Based on the results seen after Phase I of TLC³, Ponce and his staff anticipate a dynamic and rewarding educational environment throughout their district in the future. In a region of the country that once promised positive academic outcomes for only a select few, every child now has the chance for success in higher education and beyond.

"As much as we've always tried to ensure that we have equity for every student, this model takes that concept to the next level," Arcaute says. "We want our kids to be competitive, not just with their peers but across the world. And we want them to be able to walk onto any college campus and know 'I can do this...I'm prepared.'"

Adds Siebert Banks, "Giving our kids the technology tools has really encouraged collaboration, which will be extremely important in the workplace of the future. Now students are working through problems together; it's good for them to see that it's up to them to find their own answers."

"What we're doing is pretty new; there's not a lot of history to point to, about transforming the way teaching and learning is done," concludes Karr. "This is big-time stuff...and Cisco's helping make it possible."




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