TEN80 EDUCATION
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Ten80 Student Racing Challenge
User Testimonials & Stories

Contents

Ten80 Case Study: Dooly County, Georgia

Background:

Between 2007 and this current school year, 2009-10, Dooly County in South Georgia has implemented an initiative funded by the federal grant, Safe Schools, Healthy Students (SSHS). SSHS is a designed to prevent violence and substance abuse among our nation's youth, schools, and communities.

There is not a formal academic component to this grant, but the federal SSHS grant administrators based in Washington DC formally approve of this message from Ten80: "The best way to motivate our youth to participate in school and focus their attentions in productive ways is to improve their academic confidence and achievement."

Ten80 provides Dooly County students with intercession (summer) programming, after-school programming and tutoring using the FastTrack RC, Math2Go, Scaleville & MindBugs programs and strategies.

Research for this grant is conducted by an independent, third-party organization approved by the federal grant provider.

Ten80 Learning Activities:

Engineers and Educators from Ten80 have helped to incrementally change the culture of teaching in the science and math classrooms from a book-based approach to a more active, hands-on approach.

Dooly County High School launched four FastTrack RC teams, helping the science club grow from <10 to over 150 students. That high school team serves as a motivator for middle school students who participate in an internal, feeder system based on Ten80's Math2Go Challenges.

To participate, FastTrack RC team members were required to attend school and complete coursework satisfactorily. To participate in team travel (to annual finals), students were required to have even higher standards of attendance and academic achievement.

Weekly, Ten80 team members tutored students in STEM subjects.

Twice monthly, Ten80 lead team members visited the middle and high schools to facilitate model activities that serve to educate both students and educators on STEM content and the learned process of problem solving.

Each summer, Ten80 hosted 100+ middle and high school students at the STEMSA (STEM Summer Adventure), a 2 - 4 week summer camp program in which students cycled through a science ,technology, engineering and mathematics session that taught content through fun projects that participants 'owned' and felt pride in completing.

Results:

The report published October 2009 states that students working with Ten80 "consistently perform at a level demonstrating substantive progress in outcomes and have shown a measurable increase in after school programs." "On average, as derived from comparing pre- and post-test scores, participants improved their average by 11 points (1 letter grade). Students who worked with Ten80 also experienced on average an 18 point increase in their CRCT Test score."

84 students out of 96 taking the graduation test passed all 4 science domains. Four years ago the pass rate for science was only 24%. That is an average of 20% point gain per year.

Students showing improvement through the Dooly County School System academic remediation programs also work with Ten80. 76% of participating students showed improvement and math scores improved an average of 12.8 points.

Twelve (12) students who did not pass the first round of science testing worked solely with Ten80 in a brief 3-week intervention program. 50% of those students passed upon re-test. There is one more round of testing before graduation (new results not in the '09 reporting period).

8th graders at Dooly County Middle School have shown significant decreases in self-reported past 30 day use of Alcohol, Tobacco and Marijuana and an increase in onset of use of illicit substances. The improvement is credited to "success in implementing our mentoring, after-school and intercession programming".

"On average, as derived from comparing pre- and post-test scores, participants [working with Ten80] improved their average by 11 points (1 letter grade). Students who worked with Ten80 also experienced on average an 18 point increase in their CRCT Test score."

- Excerpt from US DOE Grand Performance Report ED 524B, Oct 2009; Award # Q184L060017

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Story: Rural Physics & Calculus Students

You Can Use Class Time For Hands On Projects And Still Accomplish Academic Goals.

The Bulldog Racing Team in Bald Knob Arkansas if a High School is both an after school competition team and the hands on project of both the calculus and geometry classrooms taught by Michelle Bond who is certified as a Texas Instruments "T Cubed" teacher: Teachers Teaching with Technology

The team was organized in 2009 and Michelle felt it was enhancing her calculus class by providing hands on projects in which calculus helped solve problems for the team. One students on the team was a dedicated driver and a little possessive about the car itself. After all, there were only two cars. After the first couple of months, Ms. Bonds called in a little help from a teacher who raced RC cars as a hobby and also taught Career Tech classes at the sch ool. She was concerned that the students were not comfortable with the cars and she was not sure how to guide them to explore more.

The next day students came to calculus class expecting to change a gear and collect a new set of data but to their chagrin, found the car had been unassembled. The parts from the front half of the radio controlled car were sitting on the table beside a diagram outlining where they belonged in the car. One car remained intact.

After about three weeks the car was again in one piece and ready to run. The next day, all the back of the car was in parts when students entered the club room. This time there were no panicked looks on student faces as they set to work.

Can you use class time for hands on projects and still accomplish academic goals? The answer is YES!

Bald Knob Schools ranked 13th out of 247 school districts in Arkansas on the Geometry End of Course Exam given in the Spring of 2010. This test is given to all Geometry students in the state of Arkansas.

"Our advanced students were 100% proficient or advanced, which would rank us tied for #1 with numerous schools in the state. Teachers at Bald Knob High School worked very hard along with our students to achieve this ranking."

- Michelle Bonds, Calculus Teacher

The result of this exercise was a new manual that went out with all team curriculum leading Student Racing Challenges participants through a similar exercise in which they dissassemble and reassemble the car. Teachers have been astonished at the new level of excitement exhibited by students when they no longer worry that they will ruin the vehicle, when they have confidence that they understand the basic workings of what they now consider "their" piece of machinery.

Too many students graduate never having investigated any problem deeply. Restrictions on curriculum too often mean moving on to new objectives before real understanding is reached by students. Ten80 Student Racing Challenge is the project that can help students learn how to use science, math and technology to engineer solutions to real problems.

Engineering Club

The Bald Knob Engineering Club is a club that increases interest in math, science, engineering, and technology careers. It was created to improve achievement in core subjects and help youth improve critical thinking and problem-solving skills through the active application of science, math, and engineering through the use of technology. It also fosters teamwork and confidence while helping students translate classroom learning to relevant life experiences.

Last year the club joined the FastTrack RC National STEM league which is a "little league" through which future engineers, scientists, marketing, and creative professionals prepare for their futures. In this league middle and high school students form teams around a 1:10 scale remote controlled car that mirrors professional motorsports teams and design engineers. The competition consists of race events, aerodynamic and mechanical engineering projects, business planning, media exposure, web and networking sites, and marketing activities. The students created the company Bulldog Racing and were ranked 7th in the nation at the end of the season.

The club is continuing to build Bulldog Racing this year and hopes to get sponsorship to compete in the Car Decal Design competition and go to the National FastTrack competition. The students are also working on a top secret engineering project to enter into the Creative Engineering competition at Nationals.

** Ten80 Student Racing Challenge was formerly called The FastTrack RC.

Testimonials: Rural Physics & Calculus Students

Bald Knob High School Engineering Club (Bulldog Racing)

"With Student Racing Challenge, it is the first time I have had hands on problems my students wanted and needed to solve that really required math as part of the solution. They can get to the answer using data and simple algebra but the use of a regression analysis makes everything simpler. Calculus making something simpler seems like an impossibility to most people. That is a great concept for me as the teacher."

- *Michelle Bonds, Calculus Teacher and Bulldog Racing Coach*
  Bald Knob, AR

NAF Academy of Engineering at Hopewell High School in Charlotte-Mecklinburg Schools

"I have never seen my students work so hard. The students who are younger, in algebra, drop by and ask how they can do this FastTrack thing? It is always the perfect time to say they need to do well in their math classes and make it to calculus. I am hoping the program will spread to lower grades now that other teachers see what it can do for students."

- *Elizabeth Collins, Calculus Teacher*
  Charlotte, NC

Story: Urban School Districts

Career & Tech Education, STEM, Pre-Engineering Classrooms & Academies

You Can Engage Large Groups Of Students In the Ten80 Student Racing Challenge...
... Even If They Are Not From Traditional "Racing" Demographics.

IDEA Public Charter School, Grades 6 - 12
Washington DC

In the IDEA Charter School in Washington DC, instructors were trying to motivate and teach inner city youth with hands on activities. They tried building and even racing full size cars but found that too few students were able to participate and this platform did not lend itself to experimentation with real feedback for students.

With the acquisition of its first Ten80 Student Racing Challenge kit and curriculum, Charles Smith offered students in math a hands on project. The school found that large groups of students were suddenly engaged motivated by the topic of motorsports.

Phyllis Berry-Meyers organized a non-profit group that is housed within the IDEA school building. She began to grow this and other motorsports initiatives and courses. The program is integrated into a workforce development initiative called VRROOM Motorsports & Technology Academy @ IDEA Public Charter School which was established in 2006. Using motorsports as a catalyst, VRROOM encourages students to consider science, technology, engineering, math, design, technical careers and racing at an early age.

IDEA Public Charter School, designated a National Academy Foundation, is located in the historic Deanwood section of the District of Columbia at 1027 45th Street, NE, Washington, DC 20019.

IDEA offers a unique learning environment and enhanced career opportunities integrating academic and technological career opportunities that include electrical/house wiring, computer building, repair and networking, CAD and graphic animation, design, engineering and manufacturing and leadership skills

The school celebrated its tenth year anniversary in 2007 and serves approximately 500 students in grades 7-12, ages 12-19; 97 percent African American and 85 percent of whom receive free or reduced-priced lunches.

Academy for College Preparation and Career Exploration-Brooklyn, NY

In Brooklyn, most kids in this school do not come from homes that own cars at all. Yet putting a tenth scale radio controlled car into the hands of students was all it took to help them build a little relevance into their math classes. Not every student became a race fan but that is not the goal of Student Racing Challenge. Many of them, however, found that math had utility and science offered real solutions. The one week camp led to a year long class based on the Ten80 Student Racing Challenge program.

Testimonials: Urban School Districts

Career & Tech Education, STEM, Pre-Engineering Classrooms & Academies

Charlotte-Mecklenburg Schools (Charlotte, NC)

"I currently manage the Engineering courses and curriculum that is taught in each of the high schools in the Charlotte-Mecklenburg School district. One of the challenges we have is to get females and underrepresented minorities engaged in these courses. There is a perception that the math and science requirements of "engineering" are too daunting. One of our most effective tools in dispelling this myth is the Student Racing program. We have been able to attract a broad swath of backgrounds and genders into the program. Our clubs stay vibrant because the students spread the word. The magic of this program is it brings the math and science alive in a real way with our students. In summary, our students get a hands-on opportunity to experience math, science, teamwork, design, technology, business concepts, and competition through this program. It makes learning come alive."

- *Jimmy Chancey, District Director of Career & Technical Education*

Richland I School District (Columbia, SC)

"I have found that the Ten80 curriculum has sparked a renewed student interest in math and science. Students flock to the race teams because they have fun while learning. Our students have had great experiences and been successful. Seventy five students participated in FastTrack this season We anticipate that we will have approximately two hundred students participating this season; this is thirty one percent of the district's engineering students.

The curriculum has a unique way of teaching math, science, and engineering. Students learn more by doing and give them a sense of responsibility. The FastTrack teams are set up similar to a NASCAR team. Students develop team work, the reality of meeting timelines, how different organizational departments rely on each other, and what it takes for a organization to be successful. I feel that the Student Racing Challenge program in our district is becoming a valuable tool to spark student interest in math, science, and engineering."

- *David H. Prigge, Sr., District Career And Technology Education Coordinator*

Carrolton-Farmers Branch ISD (Carrolton, TX)

Many of the students who participate in the Student Racing Challenge had no idea about how much fun working with cars would be; but after a while, they really got into it. I often heard them say to each other "dude this is so much fun!" or "yeah, what we've been working on for days now really makes sense!" Ten80 engaged a broad range of students—from those who wanted to build to those who wanted to develop a website and perform marketing tasks.

The implementation of software handed to us by Ten80, Solid Works and curriculum via moodle, allowed our students to get better at 3D computer modeling, algebra and geometry. Students were fully engaged in the tutorials and features available in both programs.

Our school is composed of a large percentage of low socio-economic students who are fully committed to making changes in their lives, but do not have the financial means to do so. Our students in the Ten80 Racing Challenge are highly motivated and extremely enthusiastic.

- *Jose Guerrero, Teacher*
  Math, Engineering, Tech and Science Academy (METSA), R. L. Turner High School

Testimonials: Urban School District

Science, Math & STEM Classrooms

Clark County School District (Las Vegas, NV)

- Mary Pike, Director Science Education, Clark County School District

Not only do a number of schools in Clark County School District participate in the Ten80 Student Racing Challenge programs and competition, our districts works with Ten80 to teach science and math in the classroom with their supplementary curriculum.

In early 2010, CCSD partnered with Bank of America and Ten80 Education in the *Students at the Speedway* event leading into the NASCAR race at Las Vegas Motor Speedway (LVMS). CCSD supported several aspects of that program through the following:

- One-hundred students were chosen through an essay contest to go on a field trip to LVMS where they had fun while learning about the science and math behind motorsports.
- While these students were at the track, approximately 24 of CCSD's lead teachers in science and Career Technical Education (CTE) attended a day of STEM training by Ten80's engineer-educator team.
- During a back-to-school meeting in August 2010, the Virtual Field Trip DVD with lessons and videos on STEM and motorsports was distributed to science department coordinators at every secondary school.

The fifth largest school district in the United States, Clark County School District is deeply committed to providing a rigorous, challenging course of study to all of our approximately 310,000 students. In addition, a strong background in science has been recognized as one of the keys to students continuing their education at colleges or universities I look forward to working with Ten80 to coordinate our community's resources, ultimately developing an active mentor network that will help motivate CCSD educators and students to pursue and achieve in STEM subjects.

Charlotte-Mecklenburg School District (Charlotte, NC)

- Cindy H. Moss, Ph.D, Director, STEM (Science, Technology, Engineering and Math)

Educational research indicates that students need relevant problem-solving experiences to show them that science and math are used in the real world. Living in the heart of NASCAR country, the experiences that Ten80 Education offer students provide motivation to accept the challenges of advanced math and science courses, which is necessary for students to enter the STEM pipeline. As the Director of PreK-12 STEM Education for our district, I first worked with Ten80 in 2007 when their engineer-educator teams conducted professional development for math and science teachers. Since then, CMS and Ten80 have partnered to implement educational programs and experiences for youth and educators including the following:

- Students at the Speedway field trips where 100 CMS students go to Charlotte Motor Speedway and participate in activities and games that illustrate the STEM behind motorsports industry careers
- Co-developed a virtual field trip to share the Students at the Speedway experience with all CMS students and forces & motion unit with a motorsports theme
- Professional Development for educators
- Career-Technology classroom projects based on Ten80's Student Racing Challenge curriculum
- After-school STEM clubs based on Ten80's Student Racing Challenge curriculum
- Summer camps

The motorsports industry in this region represents almost every type of job our students will ultimately fill. I've personally experienced the way that motorsports and cars can motivate all students, particularly our students who are economically disadvantaged and underrepresented in the STEM pipeline.

Cherry Creek School District (Denver, Colorado)

- Ross Ericson; Science and Tech Teacher, Eaglecrest High School

I am a Technology and Science teacher at Cherry Creek High School. My students have participated in the Student Racing Challenge for three years and we find it is so engaging that we have built an entire course around it. The course runs in our Technology classrooms while science teachers help students explore a number of physics concepts. Students design and create new parts for their race vehicles. They run scientific experiments, collecting and analyzing data to gauge the efficacy of their designs. Ten80 Education has worked closely with our team to correlate projects to Colorado Science, Math and Technology standards. This is an exceptionally successful program and is spreading to other schools in our area.

Charlotte-Mecklenburg Schools (Charlotte, NC)

- Erik Weghorst; Math Teacher, Mallard Creek High School

"I am a Mathematics teacher at Mallard Creek High School. My students have participated in Ten80 Student Racing Challenge in prior years and are already meeting on a weekly basis for the 2010-11 school year. The projects that we have under taken as a team have taken to core state educational standards and have allowed us to integrate ideas that are usually not possible within a given class. For example, most students study alternative energy in their freshman earth and environmental science classes. However, as a club we were able to not only study alternative energy, but we built a solar powered battery charger. This allowed us to discuss voltage, current, and circuitry. These topics generally only exist in a physics class at a high school level and are rarely put to use in a practical application. Additionally students were required to perform complex real-world calculations to conclude whether or not this prototype presented an efficient and cost effective method of charging batteries."

Richland I School District (Columbia, SC)

- Neyoka Fisher; Physics and Chemistry Teacher, ROMC (Richland I Middle College High School)

"I am a High School Physics and Chemistry teacher at ROMC (Richland One Middle College). Richland One Middle College at Midlands Technical College will improve student learning by providing all students with a rigorous and relevant Mathematic and sciences academic program. Richland One Middle College will provide all students with increased learning opportunities that ensure students will develop a strong academic foundation by incorporating Technology and assigned project based learning to make a successful transition from high school to their post-secondary pursuits. My students have participated in the Student Racing Challenges in prior years and are meeting on a weekly basis for the 2010-11 school year. The Student Racing Challenge provides us with an experimentation time for the standard of dynamics and motion in physics and also an easy way to experiment the changes of several factors in of the force, velocity, and acceleration. More often it also helps us on collecting information (data) for the probability and statistics courses. More important it give us the opportunity to create and experiment a team work, skills that are needed in the 21st century work force. "

Volusia County, Florida

- Dennis Ferrari; Science Teacher, Hinson Middle School

"The program brings relevance to what students are learning in the classroom to what's happening outside the school walls in our community," Dennis Ferrari said. According to Ferrari, "everything he teaches will be relevant to the other classes the students take" because it is not just about building cars and making them go fast, it is about building a team and learning how to collaborate and write press releases and do graphic design for the team's Web site and seeking financial sponsors for their car. While the job responsibilities will be delegated, each person is integral to the success of the program, he said.

Urban School Districts

Story: At-Risk Students

You Can Change Students' Lives.

Pedro is a successful crew chief for his Student Racing Challenge team. Two years ago, he was identified by the Charlotte Police as a potential gang member. In Pedro's science class, Bebette DeVera, his teacher had decided to work with the Ten80 program to try to motivate students to take learning "forces and motion" more seriously. Pedro and a number of his friends found cars an exciting topic. Through a grant from the police department, they were offered 8 weeks of what is known in the Charlotte area as RISE.

RISE is a gang prevention program sponsored by Gang of One with Charlotte Mecklenburg Police Department. The program exposes youth at the New Technology High School to motorsports and STEM (science, technology, engineering and math) related careers. Through RISE, teens meet weekly after school to explore the motorsports industry and other STEM related careers. During the eight to ten week program, the participants engage in project based learning, college tours, team building, career exposure, community service and other experiences that increase their awareness of future opportunities. Their grades in science rose as their behavior improved.

Teens that successfully complete the RISE program advance to the Student Racing Challenge team where they learn to operate and mirror professional NASCAR teams. The teams meet regularly to work on the 1:10 scale RC cars, run investigations, develop marketing strategies and prepare for periodic competitions.

Throughout April, the Prosperity Road Donatos in Charlotte donated twenty percent of purchases made each Thursday from 4 – 8pm to raise money for teens enrolled in the RISE (Race 2 Inspire Stimulate & Educate) program so that they could travel to the Daytona International Speedway for the Fast Track RC National Finals.

"I have enjoyed supporting the efforts of RISE", Dennis Zarelli, Regional Manager with Donatos Pizza, "The program is a unique way to engage teenagers in exposure to the motorsports industry, but it does more by presenting them with experiences to apply workplace skills."

Pedro was featured by Time Warner on a video spot for STEM education and has reserved his seat at the community college. His science teacher has moved on to a different school system and has taken the FastTrack program to the new school. Garinger won several trophies last year and are having a great early season showing this year.

News Video

http://triad.news14.com/content/top_stories/624999/rc-cars-race-toward-new-careers?ap=1&MP4

Testimonial: Middle School Girls

Dr. William Coon, Principal
660 Rawl Road
Lexington SC 29072
Telephone: 803-996-4200
Fax: 803-996-4250

RE: Middle School Girls and FastTrack RC

The Ten80 Student Racing Challenge was formerly called the FastTrack RC.

Dear FastTrack RC Team Members,

I would like to share with you my personal experience with the FastTrack RC Racing Challenges Program. As a middle school science teacher, it has always been my professional goal to engage my students in activities that are related to real-world situations and immerse students in applying mathematical concepts. Over the past nine years it has been a struggle to find that niche that would engage my students and provide an outlet for open, self-guided inquiry.

Being a lifelong fan of NASCAR, I have always had a fascination with the engineering and physics of race cars. Once I witnessed my first race at Darlington the desire to incorporate the concepts of race engineering into my classroom was deeply set. I searched for a curriculum that would align the sport with regular education, but for months I could not locate such a program. When I discovered the FastTrack RC Racing Challenges, I implemented the program immediately and I was pleasantly surprised with the results.

This past school year my FastTrack RC team consisted of five girls who were very shy in the regular classroom, but I knew had tremendous potential to succeed. These ladies had no previous experience with auto racing or the science behind the sport. After completing a series of investigations using the 1:10 scale remote-controlled cars, it was amazing to watch these girls begin discussing drive paths, gear ratios, and the importance of driver consistency. At the same time, the girls began putting together a team organization plan that involved setting long and short term goals, assigning job responsibilities, and designing a marketing package that would ensure future sponsorships for the team. In finals competition at Lowe's Motor Speedway this past May, the girls won first place for their team logo design and second place for their marketing presentation.

What I find amazing is that by participating in the FastTrack RC program, these ladies have unlocked a self confidence and desire to learn that I feel could not have been accomplished by any other program. They now watch NASCAR races on television and have an understanding of how race cars are engineered to win. They come back to school from the weekends and are excited to talk about the role of aerodynamics at restrictor plate tracks, why different gear ratios are run at certain tracks, and why drivers take a sip of certain drinks while being interviewed! Also, when these ladies are in the regular classroom they now openly communicate to fellow students the importance of precise measurements and provide assistance to those who need help in analyzing data. Our main goal for this upcoming season is to recruit fellow students to become a part of our successful team.

Sincerely,

Mary Elizabeth Farmer
Pleasant Hill Middle School, Lexington, South Carolina

Testimonial: Private Schools & Upper Level Income Students

Private School in Los Angeles, CA
- Dr. Judy Storm; Physics Instructor, ***Marlboro School for Girls***

"Student Racing Challenges engages students in such a way that students seek out learning about Mathematics and Science. This is a very unique quality that many seek but few achieve. This program engages students in such a way that students seek out learning about Mathematics and Science. This is a very unique quality that many seek but few achieve. To take something so "fun" and create a curriculum around it is a daunting task and rarely ever done with such skill and success. Ten80 has found the key and managed to create and inspire students to become interested in the Science and Math behind the racecar. All we as teachers need is for students to get started, because once exposed they become fascinated and intrigued. My students are very lucky in their daily lives. They don't "need" anything that money can buy. They do however have the same deficit of problem solving skills I saw in the very high poverty area of south Georgia where I taught before moving to CA. I still use my summers working with underprivileged students teaching Student Racing Challenge Camps. These experiences keep me in touch with how important Ten80 is in establishing relevance for math and science for all students."

Testimonial: Professional STEM Mentors for FTRC Teams

Jeremy Losaw (Charlotte, NC)
(864) 650-4124; jeremy_losaw@toyota.com

Jeremy works monthly or more often with Garinger New Tech High School (high poverty school) in Charlotte-Mecklenburg Schools

"I hold a masters degree in Mechanical Engineering from Clemson University and I am currently employed as a design and test engineer for the NASCAR division of Toyota Racing Development. Most of my career experience is in the racing industry and I held a position as the head engineer for a NASCAR team before moving to my current position. This experience helps me when working with the Ten80 program because I can speak to the students in a direct way of how physics and engineering play a role in how a car will perform on the race track. I have worked with Ten80 for the last year and a half in a mentor role in three of the Charlotte area high schools. I have given lectures about racecar vehicle suspension systems and helped the students with aerodynamic and green energy research projects.

I believe that the Student Racing Challenge curriculum really reflects how science, math and technology are used in industry. I also know that U.S. businesses are struggling to recruit and hire skilled individuals who understand how to work in a collaborative, competitive atmosphere of creative innovation and problem solving. I believe that if today's and tomorrow's students can succeed in projects like those in the Student Racing Challenge program, our country will be on the way to solving this problem. As importantly, many of these future professionals will start their own U.S.-based companies and support the growth of domestic industry."

Ten80 Case Study: McWhorter Elementary School, TX

5th grade Science/Math teacher implements Math2Go, Scaleville and MindBugs

Background:

Sandy Mettler is a thirty year classroom veteran and 5th grade lead science and math teacher in Fort Worth, TX. Because Ms. Mettler is known for seeking out innovative approaches to teaching, she was invited by her principal to move into a new school in 2001. The new school was located in an area in which 56.6% of the population was "economically deprived" and over 85% were from a minority subgroup. Ms. Mettler's first year in this new school was a challenge: to teach a 5th grade class that had achieved well below the state and district average on the state standardized test (TAAS) as 4th graders.

Ten80 Learning Activities:

Ms. Mettler participated in MindBugs professional development through which she and other educators were introduced to a conceptually based approach to teaching math and science. She took the new strategies and methods straight to her students by creating a model classroom. She also built an ongoing and supportive relationship with the Ten80 team.

Ms. Mettler's model classroom integrated Scaleville daily and weekly activities, MindBug Buster centers and Math2Go monthly activities into the core curriculum.

Motivation:

"I needed to motivate students who saw themselves as academic failures. There was not a lot of support at home for most of them.

"I didn't want a new curriculum or textbook. I wanted a different way to explain things and demonstrate things that worked with kids who didn't come to me on grade level without boring the ones who needed to be challenged. This approach helped me do that." - Sandy Mettler

No Math Gene: In Ms. Mettler's Words

"I never considered myself a science or math person. That's why I sought out some help in the subjects. The MindBugs strategies immediately helped me feel more confident. In continuing to learn and work with them over the years I've kept improving professionally."

Results Summary:

After her first year at this school, Ms. Mettler's students scored significantly higher than the state and district average. Of particular note is the achievement of her minority students. 100% of Ms. Mettler's Hispanic students and 90% of her African American students passed the TAAS. These numbers represent a 10% to 20% gain for this subgroup as compared to the school's 3rd and 4th grade scores that same year.

Since 2002, Ms. Mettler has taught both science and math, with her students consistently exceeding the achievement levels as compared to the state, district and her campus.

In 2005-6, Ms. Mettler taught only 5th grade science. Her 86% pass rate was a significant contributor to a commendable rating for the school in science. The math students did not meet expectations that year.

In 2006-7, Ms. Mettler returned to the math classroom and led her students to improve scores by 23% over the previous year. The district superintendent paid a special visit to congratulate her and her students.

Summary: Data shows dramatic improvements with Ms. Mettler implementing Ten80's MindBugs, Math2Go and Scaleville strategies.

	2006 Items Correct Percentage	2007 Items Correct Percentage	Gains
Instructor	Other	Ms. Mettler	
Objective 1	75%	88%	+13
Objective 2	71%	81%	+10
Objective 3	77%	83%	+6
Objective 4	70%	83%	+13
Objective 5	76%	75%	-1
Objective 6	72%	83%	+11
Percent Passing after April Administration	71%	94%	+23

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Ten80 Case Study: McWhorter Elementary School (contd.)

2002 was Ms. Mettler's first year at the new school and using MindBugs in Math. With her conceptually-based approach to teaching, 95% of Ms. Mettler's students passed the 5th grade TAAS test with 100% of her Hispanic students and 90% of her African American students passing. These rates were above both district and state achievement in those subgroups.

The next year the TAAS changed to the TAKS and Ms. Mettler changed from Math to Science. She began the MindBugs in Science Program. In 2004-5 Ms. Mettler returned to teaching 5th grade math, exceeding the average throughout the state, district and in other campus groups.

District Name: CARROLLTON-FARMERS BRANCH

Campus Name: MCWHORTER ELEMENTARY

Campus #: 057903129

TEXAS EDUCATION

Academic Excellence Indicator

2004-5 Campus Performance

Indicator		State	District	Campus Group	Campus	African America	Hispanic	White
Grade 4 Mathematics	2005	26%	31%	25%	17%	*	*	*
	2004	36%	46%	43%	*	*	*	*
Grade 5 Mathematics	2005	47%	55%	52%	71%	60%	*	*
	2004	31%	39%	30%	*	*	*	*
Grade 5 Mathematics	2006	39%	42%	20%	*	*	*	*
	2005	47%	55%	52%	71%	60%	*	*
Grade 5 Science	2006	c	83%	74%	89%	80%	83%	>99%
	2005	64%	72%	66%	66%	68%	43%	80%

In 2006, Ms. Mettler returned to her math teaching. The improvement over previous achievement was dramatic, prompting a visit from her school superintendent to congratulate Ms. Mettler and her students on their performance.

	2006 Items Correct Percentage	2007 Items Correct Percentage	Gains
Instructor	Other	Ms. Mettler	
Objective 1	75%	88%	+13
Objective 2	71%	81%	+10
Objective 3	77%	83%	+6
Objective 4	70%	83%	+13
Objective 5	76%	75%	-1
Objective 6	72%	83%	+11
Percent Passing after April Administration	71%	**94%**	**+23**

Ten80 Case Study: Cook County Middle School

6th grade improved math scores using Math2Go and MindBugs Professional Development

Background:

2003 CRCT scores for Cook County Schools showed a 21% gain in students passing the state test. The two year pilot with Ten80 helped the school to achieve AYP. They were removed from the needs improvement list.

The pilot program was initiated in two sixth grade teams. Both teams had sustained an average pass rate of only 52% of their 240 students. After year one of this pilot, the two teams achieved pass rates of 72% and 74% respectively. In year two, the program moved into the seventh and eighth grades.

The changes were the beginning of a sustained trend upward in scores for the school.

Results:

Cook County Middle School Grade 6 showed significant improvement in 2003 standardized testing scores (GA CRCT) after the first year of implementing the strategies of Math2Go Applied Challenges and MindBugs Professional Development.

Two teams of four teachers and approximately 240 students used the Ten80 products and strategies.

One team scored an average of 74% passing and the other 72% passing. This represented a 21% increase in the number of passing students.

There was also a 12% rise in points from students exceeding standards.

Ten80 Learning Activities:

Ms. Myers and three colleagues on the two sixth grade teams made a difference in how students learn. The two teams engaged their students in a Math2Go competition that lasted all year and culminated in a final event. Students were so motivated to do well in the challenges that they met requirements of completing all homework and not earning conduct demerits in order to participate in the data collection activities.

Teachers worked one day a month with a Ten80 Content Specialist to hone their strategies and content knowledge through the MindBugs professional development course.

Ms. Myers of Cook County Middle School Georgia

Motivation:

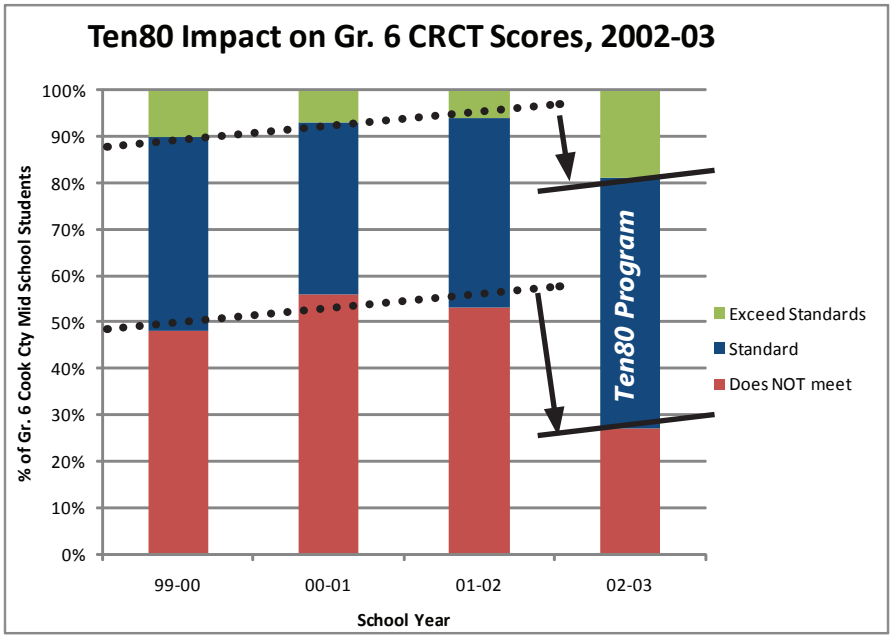
"Year after year we had around 50% of our sixth graders who didn't meet state standards. I think we were hungry for some new ideas.

We knew our student population needed to be motivated. They didn't choose to do homework and many didn't have basic computation skills.

Maybe the thing that helped most was that our science and math teams decided to work together since quite often its the math skills that keep students from succeeding in science classrooms. By the second year, we were even dividing up math objectives. The science teacher took responsibility for some that were a natural fit for the science curriculum. Our students didn't know whether they were in science or math class.

We could integrate curriculum because we teachers worked on our own conceptual understanding of our subjects. We had all sorts of real not artificial connections that we had never been able to make before"

- Ms. Meyers



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Ten80 Case Study: The Eagle Team Innovates & Succeeds

Georgia 1993 Team of the Year

Background:

The Ten80 formula for success in math is presented through the Ten80 Classroom, a customized educational program initially conceived in 1993. Jeff Thompson and Beverly Simmons, the founders and developers of 1080 Education Inc. (Ten80), participated as curriculum developer and teacher respectively in a novel and award-winning classroom at Haynes Bridge Middle School in Georgia. This early experiment in alternative approaches to teaching math and science initiated the 10-year effort by Jeff and Beverly that ultimately resulted in the Mind Bugs, Math2Go and Scaleville products that make up The Ten80 Classroom.

Initial research for these programs was conducted in the science and math classes of Haynes Bridge Middle School. Jeff Thompson and Beverly Simmons participated as curriculum developer and teacher respectively.

Ten80 Learning Activities:

The EAGLE team was an award winning multi-age team of 6th, 7th and 8th graders in Haynes Bridge Middle School in Alpharetta, GA.. Math2Go and Mind Bugs concepts were piloted in Beverly Simmons' classroom for three years. Beverly was the lead in developing science and related math curriculum for the team and presented at a number of national conferences with University of GA researchers who documented the program successes. For her work on the team, Ms. Simmons received the GA Presidential Award for Excellence in Math and Science Teaching. The Eagle Team was named GA Team of the Year in its second of three years. The effort was part of a four year longitudinal study by the University of Georgia Department of Education; conducted under the direction of Dr. James McLaughlin.

Motivation, Beverly Simmons:

"I kept thinking I was missing something. I finally put out a call in my community outside Atlanta inviting anyone who actually USED math and science to solve problems to visit any day at any time. I was amazed at the engineers, chemists, business leaders and carpenter dads who came on a regular basis to be part of my class.

To be honest, I never knew how much I did not know.

It was from these very exciting classroom adventures with engineers, scientists and teachers working together that Mind Bugs and Math2Go developed. They are the culmination of years of helping students and teachers gain a conceptual knowledge of math. Nothing translates more quickly into improved student learning than increased teacher knowledge."

Results:

These precursors to the Ten80 Classroom were statistically proven to raise student achievement in science and math. Results from the University of Georgia longitudinal study included the following findings: *"In all four subject areas, the experimental group had a higher mean score than the control group. Using t-tests, a significant difference was found in science achievement, at the level of p<0.05. The magnitude of experimental students' success becomes evident when all 8th grade experimental students are compared with all 8th graders in the school, nearly a quarter of whom are labeled "gifted". Even though none of the experimental students were categorized as gifted, they outscored other 8th graders on all four sections."*
(McLaughlin, 1996 AERA presentation)

Excerpt from University of Georgia Longitudinal Study

Means, Standard Deviations, and T-Scores on the Curriculum-Based Assessment Science Subject Area Tests, Grade 8

Experimental Group		Control Group			
(n=26)		(n=26)			
M	SD	M	SD	*f*	
180.62	2.50	175.36	2.07	2.11*	

Experimental Group		Control Group			
(n=32)		(n=178)			
M	SD	M	SD	*f*	ES
180.16	11.65	178.52	15.51	0.69	+.11

*p<0.05 (Statistically significant difference)

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