

# WhatWorksSC

case study

## About WhatWorksSC

In 2005 and 2006, with a grant from the William and Flora Hewlett Foundation, the Riley Institute at Furman conducted the largest ever study of public education in South Carolina. The study yielded key strategies for creating world-class schools in South Carolina, derived from 3000 focus group hours with more than 800 stakeholders.

**WhatWorksSC** ties those strategies to a number of initiatives to serve as a resource for educators, students, the community and policy makers in South Carolina. Products include case studies, which drill down on innovative initiatives from across the state; a series of expert papers that further explore the findings of the study; and an evolving clearinghouse of programs and initiatives that exemplify the study's essential key strategies for improving public schools.

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***“...students are creating, designing, building, and developing the problem-solving skills they need to be successful in the future. Anderson CTC truly is a model for the entire nation.”***

***—John Lock, CEO of PLTW***

## Project Lead The Way (PLTW)



**W**hen Project Lead the Way (PLTW) students in Anderson County were working on an electric car project last year and hit a roadblock, teachers were able to call Mike Darby, owner of Darby Electric, for help. Within 30 minutes Darby, whose business rebuilds electromechanical equipment, was at the school answering questions and sharing his expertise.

Strong partnerships with the local community is one of the things that makes PTLW work so well, well enough, in fact, to be selected from a national pool as a 2009-2010 PTLW model school. In addition to local businesses such as Darby Electric, partners include organizations such as Bosch, the University of South Carolina, and Tri County Technical College. These partners work with the Anderson School Districts 1 & 2 Career and Technology Center (CTC), which implements PTLW, to provide a program that effectively delivers individualized instruction to students in disciplines that are so crucial to the economic growth of South Carolina.

How does PTLW deliver such instruction? Through a hands-on curriculum that focuses on delivering STEM (Science, Technology, Engineering, and Mathematics) through real-world, project-based learning. The Anderson CTC works with Project Lead The Way Inc, a national non-profit organization that is a leading provider of K-12 STEM education, to integrate this innovative and rigorous curriculum into its program. Students in the program have the opportunity to create, design and build things like robots and cars, directly applying what they are learning in their math and science classes. This focus on student engagement is crucial for the delivery of STEM subjects since many talented students learn this material more effectively “doing” rather than “hearing.” As stated on the PLTW web site, “while the STEM subject matter is rigorous, the approach is never rigid, because the PLTW program provides a flexible curriculum platform schools can customize to meet the specific needs of their academic environments.”

Anderson's CTC began the implementation of PLTW in 2006. Classes are taught during the school day, and every PLTW instructor receives extensive training as well as ongoing support in the courses they teach. Students from three high schools are served: Belton Honea-Path, Palmetto and Wren. A fourth high school, Powdersville, will be added during the



***“We depend on [the Partnership Team] 100 percent. They actively participate in the curriculum, donate equipment, time, money – and expertise.”***

***— Cindy Langley,  
Anderson PLTW  
teacher***

2011-2012 school year. The PLTW program has grown to approximately 500 students during 2010-2011. With the recent addition of Aerospace Engineering, the CTC offers students eight honors STEM courses.

PLTW goes beyond coursework as instructors work closely with both the guidance counselor at the CTC as well as the counselors/career development counselors at the feeder middle schools. Every year, instructors and counselors visit each middle school in both districts to advise students about engineering, the PLTW program/course offerings, post-secondary credits, and career opportunities available to them upon completion of a program. PLTW also hosts a Gateway Academy summer camp for middle school students interested in STEM, which is free of charge. The camp is facilitated by PLTW instructors and currently enrolled PLTW students mentor and assist camp participants. In addition to working with middle school students, PLTW students attend career days at local elementary schools to educate the younger generation about possible careers in engineering.

Regarding resources, annual program costs vary depending on equipment needed to update curriculum and maintain industry standards. There is a reliable funding plan in place to support the continuation and growth of the PLTW program at the Anderson Career and Technology Center. However, as the economy fluctuates, there continues to be a focus on grant writing and exploration of alternate funding sources.

In terms of program effectiveness, extensive evaluation conducted by both Anderson County School Districts 1 and 2 and the national PTLW organization show a high level of program effectiveness and positive outcomes. Over the last several years, numerous academic institutions have released reports confirming PLTW's success in engaging the hearts and minds of students through STEM education. The studies are all unique in how they were conducted. However, the results say the same thing: PLTW is igniting the imagination and innovation of students through learning.

- PLTW alumni are 5 to 10 times more likely to pursue engineering and technology classes than other first-year college students.
- On average, PLTW alumni have a GPA 0.21 points higher than the average GPA of all first-year college students.
- PLTW students outscored a random sample of other career/technical students by 10 points in reading, 11 points in mathematics, and 10 points in science.
- 79 percent of PLTW graduates completed four years of college-preparatory mathematics and 63 percent completed four years of college-preparatory science.
- 97 percent of PLTW alumni said they planned to pursue a four-year degree as opposed to 67 percent of non-PLTW students.

The success of Anderson's PTLW program is evidenced by its selection as a 2009-2010 PTLW national model school. As stated by John Lock, CEO of PLTW, Inc: "There are thousands of PTLW schools around the country that are engaging students in learning through imagination and innovation. Only ten are named model schools and we congratulate Anderson CTC teachers and students for the incredible work they've accomplished over the last year. Anderson CTC classrooms demonstrate what is possible when imagination and innovation are ignited through learning. Students are creating, designing, building, and developing the problem-solving skills they need to be successful in the future. Anderson CTC truly is a model for the entire nation."

*[riley.furman.edu/education](http://riley.furman.edu/education)*

*Working at the intersection of education research and practice in South Carolina*

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**Written by :**  
Brooke Culclasure, Ph.D.  
Research Director,  
Center for Education  
Policy and Leadership  
The Riley Institute

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Some information was  
obtained from the PLTW  
website

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**For more information on  
Project Lead The Way of  
Anderson County**  
Cindy Langley  
[clangley@andersonctc.  
k12.sc.us](mailto:clangley@andersonctc.k12.sc.us)