



Institute for Public School Initiatives
The College of EDUCATION
THE UNIVERSITY OF TEXAS AT AUSTIN

College and Career Ready Student Programs

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November 2014

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The Institute for Public School Initiatives (IPSI) solves education's complex problems by building strategic partnerships with agencies, foundations, business leaders, and associations. Launched in 2004, the Institute is known for its innovative statewide solutions that increase student achievement and teacher and school effectiveness.

Students entering the ninth grade this year selected an endorsement or a career-path that determines the coursework each student will take in high school. Each option follows the state guidelines, promising students that they will be college and career ready upon graduation. This opportunity for students is important as they will leave high school with employable skills for workforce opportunities. Now, districts are responsible for implementing the promise. There are examples in Texas and across the nation of districts and schools that are ensuring students are college and career ready upon graduation.

First, Early College High Schools (ECHS) are the best example and actually define college ready students. Now they have to extend their focus to career skills so students have the skills to move into the workforce right away or after they earn a degree. A couple of Texas ECHS campuses that do both are Harold T. Branch Academy for Career and Technical Education in Corpus Christi ISD and Texas ECHS in Marshall. While these types of career-focused campuses are not common in Texas, they have existed in other parts of the country for several years now. College and career focused campuses have three things in common:

- strong engaged business partners
- curriculums focused on what Texas calls “endorsements”
- professional development (PD) that assists the teachers in connecting the endorsements to their content area

Strong engaged business partnerships allow the campus to connect in realistic ways with workforce opportunities. Business partnerships provide many opportunities for students that include job shadowing, internships, mentors, speakers, field trips, and sometimes classes for students to learn a particular skillset. In addition to the opportunities they provide students, they extend opportunities to teachers and staff that include mentoring, training, externships, curriculum support, and PD. Businesses support the curriculum by providing information about the skills students need in the different content areas. Teachers are mentored in best practices for business, provided with actual real-world problems to use in project based learning activities, and often invited to participate in externships in order to experience the business environment.

Curriculum support is also provided through individualized professional development opportunities where teachers and their business partners discuss and create a curriculum that is not only rigorous, but also incorporates business experiences. The curriculum supports students being college and career ready. Since both the goal of the school and the intention of the businesses are for the graduates to be hired by the local businesses, the strong supportive, engaged partnership is an important part of an innovative college and career focused campus. The state of Texas supports this process through HB5, where the educational focus is on career and college opportunities, especially now that the Texas Education Agency has announced a new ECHS designation application (<http://ci74.edb.utexas.edu/ECHS/>) that is due on December 19th.

Besides a couple of campuses in Texas, there are several ECHS campuses in North Carolina under the North Carolina New Schools organization that have one major area of concentration (endorsement), strong engaged business partners, a curriculum that embraces the endorsement in all content areas, and PD that supports the teacher in connecting their content area to the endorsement. These programs are five years in length, rather than the four years traditionally used in Texas ECHS campuses.

Northeast Regional School of Biotechnology and Agriscience is an example of a STEM ECHS that is located in a rural, poverty-stricken area in an Agricultural Research Center. Teachers and students at this rural campus have had to find different ways to teach and learn that include their partners. They use their Agricultural Research Center partner to provide depth to their STEM program curriculum. Students assist in research projects with scientists, plus their classroom projects mirror research activities occurring at the research center. Their higher education partner, North Carolina State University, is not close enough for students to take courses on campus, so they have had to create a program and a curriculum where students would be successful taking college courses online, especially since many continue their education at North Carolina State University, one of the top universities in the state. The professional development provided for the teachers promotes the needs of the teachers and includes collaboration between content areas. It incorporates biotechnology and agricultural themes within all content areas, and includes information about how to support students taking online college courses. With their partner's support, a curriculum based on the endorsement, and PD that supports teachers, students are developing research skills needed to solve agricultural problems in their immediate area and develop the academic readiness needed to pursue and complete a degree from North Carolina State University.

Another ECHS in North Carolina, Yadkin Valley Regional Career Academy, focuses on developing student interests or career pathways that support the changing economic needs of the region. It is an "economically themed regional school." Businesses, community leaders, and educators work together to create a school that incorporates what is relevant to the economic development and local industry in the area at the present time. The local businesses provide job shadowing opportunities, internships, expert speakers, and field trips. They visit classrooms to speak with students and teachers individually. The businesses are actively engaged in the school. For example, three of the local businesses (Small Footprint, Odigia, and InterAct) taught 10 million students how to write computer code in one week. The businesses saw the need and provided the resource to the school.

Educators and students are directly connected to local businesses. Teachers are provided with insights into the needs of the businesses, and through the support of the businesses, those insights are incorporated into the curriculum through relevant real-world project based learning activities. These activities are often actual business projects that give the students the opportunity to provide possible solutions for the businesses. Business partners also influence and participate in teacher development. Teachers are provided with relevant project based PD focusing on the connection between their specific content area and how it relates to business leadership and best practices in the industry. In addition, teachers work closely with the local industry to increase their knowledge of the business environment. Yadkin is constantly connected to the needs of the community ensuring students are not only college ready, but also career ready.

There are several ECHS campuses in North Carolina that are similar to the two campuses mentioned above. They all have strong business connections, their curriculum is deeply connected to the endorsement, and teacher PD is focused on assisting the teachers in incorporating the endorsement into their content area through the support of their business community. In addition to PD occurring during the school year, North Carolina New Schools also provides teacher externships opportunities where teachers can spend a day or several weeks in residencies learning about the businesses first hand and finding relevance in order to ensure that the learning happening in the classroom is focused on the competitive job market graduating seniors are entering into. Once teachers have the opportunity to experience the needs of the workplace, they are asked to create a curriculum that includes project based learning activities that merge their content area with those needs. There are a variety of ECHS campuses in North Carolina for Texas school districts to use as an HB5 model, including a Visual and Performing Arts Center ECHS for students who are interested in studying the arts.

New York has similar models; P-TECH and B-TECH are two examples. They are six-year high schools or 9 – 14 ECHS models. Business partnerships, workplace focused curriculum, and specific PD for teachers are also core to these models. Business partners provide support for the teachers and students using mentors, site visits, and industry and college field trips and activities. They connect teachers with industry professionals to help enhance the curriculum, connect it to the workplace, and provide assistance with teacher PD. In addition to business support within the school district, IBM has created entry-level positions for students who have completed the program.

P-TECH is a STEM school where students start their STEM focus in 9th grade. Their curriculum consists of 90-minute classes focused on mathematics, English, workplace learning and technology. These courses form the building blocks of STEM college majors and the needs of their business partners. The school offers 10 periods daily.

Teachers teach 5 – 6 periods, and the remaining periods offer teachers time to plan for upcoming lessons and PD that is offered during the school day which often involves meeting with their business partners. This additional time enables teachers to carefully integrate academic and workforce content in meaningful ways for students.

B-TECH is designed similar to P-TECH, but they have a career and technology focused curriculum. Their partner is SAP, a multi-national company that develops business management software, who provides mentors and apprenticeships for students. The curriculum is based on the design process where students use problem solving skills to find or create solutions to problems. This is important since technology positions require students to know computer programming and have problem solving skills. The SAP partnership provides teachers with trainers and mentors to help them create a curriculum where each content area embraces technology and/or needed business skills.

The Chicago Public Schools have also designed career-focused ECHS campuses with strong engaged business partners that include Cisco, IBM, Microsoft, Motorola Solutions, and Verizon. Each ECHS has their own partner who assists the teachers in preparing the students for positions within their company or at similar companies. The ECHS campuses are looking to the community businesses for guidance to ensure students are not only college ready but career ready. This may include students obtaining certificates along with an associate's degree.

Lake View STEM ECHS in Chicago is partnered with Microsoft's Elevate America Program where STEM concepts are integrated into all classrooms and all students take a computer science course that develops their skills in fundamental computer science and programming. Students begin their technology-focused program by creating a WordPress digital portfolio in the 9th grade. Their higher education partner also integrates technology into every university class, therefore students are using technology in not only their high school courses but also in their college courses. One of their higher education partners, Northwestern University, provides STEM graduate students to serve as helping teachers to assist teachers in the implementation of inquiry methodology, computational thinking, and modeling. Their partners also provide summer camps that support STEM and STEAM content where mentors support students as they proceed through STEM challenges and work with experts to solve real world problems related to the Chicago area. These camps also allow the students to interact with and have career discussions with local business executives. The partnerships support and assist in the design of curriculum. They also assist with PD that focuses on computational skills necessary for next-generation STEM professions by assisting teachers in infusing the skills into their lessons. The partners believe these opportunities help students develop necessary skills, inspire them, and empower them to imagine career opportunities for themselves in STEM fields of study.

Marlborough Public Schools is an example of an ECHS in Massachusetts located in a region known as the state's innovation corridor. It is burgeoning with a high concentration of healthcare jobs, and is home to nearly one-third of the state's technology jobs. Boston Scientific, Raytheon, and Dow Chemical are a few of the large companies located in Marlborough that focus on biotech, energy, manufacturing, and medical solutions. The companies have traditionally had to recruit for these positions in foreign markets because they were unable to hire qualified candidates within the United States. It is important to the community and the district to create a partnership between the STEM ECHS and the businesses in order to create potential career opportunities for graduating students. One example of how the businesses work with the school is by creating projects for the students each year. The students are put in grade-level teams and are given a topic. They then have to create a prototype and an exhibit to showcase their project. Last year the 9th grade students' topic was "Going Green." Their projects included areas of renewable and alternative energy and energy efficient solutions. The 10th graders were asked to colonize Mars based on a set of criteria that explores the world of science and engineering. Students and teachers work closely with the business community to explore science and engineering concepts. Students are immersed in advanced courses and work-based project learning opportunities that help them develop science, technology, engineering, and math skills to support the fast growing college and career fields in the local area.

Another ECHS that is focuses on college and career readiness is Canton ECHS, where a CAST apprenticeship and mentorship program offers students an accelerated program and provides a comprehensive business training and development program. Students are given a competitive advantage for employment and higher education opportunities through mentorships, career seminars, apprenticeships, and networking. While many of these innovative ECHS models focus on STEM concepts, this program enables students to choose between Arts and Humanities, Business, Health and Medicine, and Public and Social Sciences in addition to STEM careers.

There are several individual ECHS campuses, districts, and organizations working with ECHS campuses across the nation to support career readiness. Again, the commonalities between all of them are strong engaged business and IHE partnerships, a curriculum that has the endorsement embedded in all content areas, and appropriate PD for teachers that focuses on the needs of the teachers, in particular, supporting the teacher's understanding of the connection between each student's education and the skills needed to be career ready. Their primary focus is to ensure students are college and career ready.

As Texas welcomes new businesses and supports the growth of present businesses, the merger between the business community and the education community becomes vital.

Innovative campuses where businesses are integral partners are a benefit to students, the campuses, and the business community. Businesses provide the insight to the skills students need as they enter their careers or the workforce, they provide necessary support campuses need to understand the business environment, and they provide opportunities for students and teachers to explore the business environment. Students can make educated decisions about career choices, and teachers are able to understand and know workforce skills relative to their content area. Businesses provide this information. Educators, in turn, provide the instructional knowledge needed to teach students. Educators know best educational practices and how to work with students in providing an education that is college and career ready; one that is rigorous and supportive of each student's career path or possible employment opportunity.

Creating innovative campuses connects business and educational communities with a common goal of providing what is best for the student and the community. Texas students are provided with a rigorous education that includes viable employment skills and employment opportunities with local companies, so companies don't have to recruit from outside the state. Whether a student selects college or a direct path into their career after high school graduation, since they participated in an ECHS that focuses on both, they have options that are broader than before and are beneficial to both them and their community. Now students can choose to go to college after high school graduation or start in the workforce and then go to college knowing they will be successful either way thanks to innovative campuses that keep the promise Texas has made to each student.

RESOURCES

North East Regional School of Biotechnology and Agriscience

<http://ncnewschools.org/testimonials/video/the-northeast-regional-school-a-stem-pioneer/>

Yadkin Valley Regional Career Academy

<http://ncnewschools.org/testimonials/profiles/case-study-yadkin-valley-regional-career-academy/>

<http://ncnewschools.org/wp-content/uploads/2014/09/Valley-Academy-Compass.pdf>

PTECH

<http://www.ptechnyc.org/site/default.aspx?PageID=1>

B-TECH

<http://www.btechnyc.org/>

Chicago Public Schools

<http://www.cps.edu/Pages/ECSS.aspx>

Lake View STEM ECHS

<http://www.lakeviewhs.com/about/documents/LVHS-School-at-a-Glance-Fall2014.pdf>

Marlborough Public Schools

<http://marlborough.schoolfusion.us/modules/cms/pages.phtml?pageid=229523>

North Carolina Externships

<http://ncnewschools.org/teacher-externship-showcases-power-of-collaboration/>

About the Author

Debra Erhart serves as an Executive Master Teacher for The Institute. Deb's initial experiences in coaching led her to coaching teachers in four different states, including Texas, and in dozens of districts and schools. Her coaching experience has expanded to include coaching teachers in creating a rigorous curriculum that included alternative assessments, coaching elementary and middle school teachers in the use of fine arts to enhance core content in their classrooms, coaching math coaches under the Texas Education Agency's (TEA) Algebra Readiness grant, and her most recent coaching experience was as a Design coach for Early College High Schools. Deb has always been willing to share her knowledge, insights and experiences with others because as educators, we share a common goal to help students grow and learn.



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