



Creating, Scaling and Sustaining Innovative High School Models

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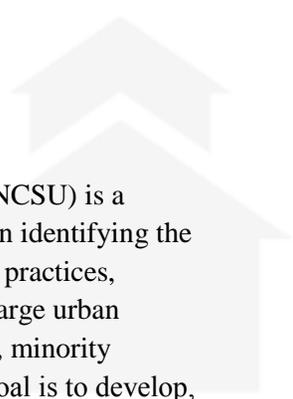
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The National Center on Scaling Up Effective Schools (NCSU) is a national research and development center that focuses on identifying the combination of essential components and the programs, practices, processes and policies that make some high schools in large urban districts particularly effective with low income students, minority students, and English language learners. The Center's goal is to develop, implement, and test new processes that other districts will be able to use to scale up effective practices within the context of their own goals and unique circumstances. Led by Vanderbilt University's Peabody College, our partners include The University of North Carolina at Chapel Hill, Florida State University, the University of Wisconsin-Madison, Georgia State University, and the Education Development Center.

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Creating, Scaling and Sustaining Innovative High School Models

Shifts in the national economy and workforce, challenges in postsecondary access and completion, and ongoing expansion of global competition have accelerated the need for innovative educational programs.¹ In Texas and across the country, there is mounting concern surrounding a student's ability to succeed after high school, and then their pursuit of a successful postsecondary education. Many students struggle to make the connection because they are not well-prepared for postsecondary academics, cannot afford college, do not see higher education as a viable option, or are unaware of the career opportunities that certain postsecondary pathways can provide.

Increasing academic rigor, changing instruction, creating marketable work-based pathways, building a demand for those pathways from students and parents, and taking innovative risks to prepare students for their postsecondary pursuits requires a significant shift in how students are educated. It also takes a multi-agency approach to ensure that conditions are put into place to allow students to earn and transfer credits, connect to a viable field, and succeed with their choice postsecondary experiences. Making those changes during times of fiscal scarcity can be difficult, but well worth the investment. To increase postsecondary access and success, we must:

- Prepare students and families academically, culturally, and socially for postsecondary education;
- Creatively engage students growing up in the fast-paced information age;
- Create equity for students by scaling successful programs beyond single schools;

- Provide clear models with implementation guidelines to practitioners;
- Help K-12 and higher education school systems acquire support and resources to research, pilot, and scale successful programs;
- Connect the K-12 and higher education systems;
- Create a policy environment that will support, scale, and sustain successful programs; and
- Address unmet workforce needs by connecting with business and community leaders.

While the list is long, it reflects the complexity and level of engagement necessary to ensure students can successfully transition from K-12 to higher education, and eventually into the workforce. The increased demand to prompt and improve that transition is not unique or new, although, it has gained phenomenal traction in the past three to five years. Regardless of the rise in innovative programs and approaches targeted toward improving instruction and student achievement in secondary schools, the results vary.

One way organizations in Texas are tackling the improvement of postsecondary readiness, access, and success is through strategic partnerships that align expertise and resources towards this common goal.

This paper outlines how Educate Texas, a public-private initiative of Communities Foundation of Texas, scaled effective school models through a strategic alliance model with state education agencies, philanthropic foundations, business groups, and educators. Details on how Early College High Schools (ECHS) and Texas Science, Technology, Engineering and Mathematics (T-STEM) Academies were successfully created and scaled through our collaborative model, as well as lessons learned, will also be included.

Learning to Scale from Lessons in the Field

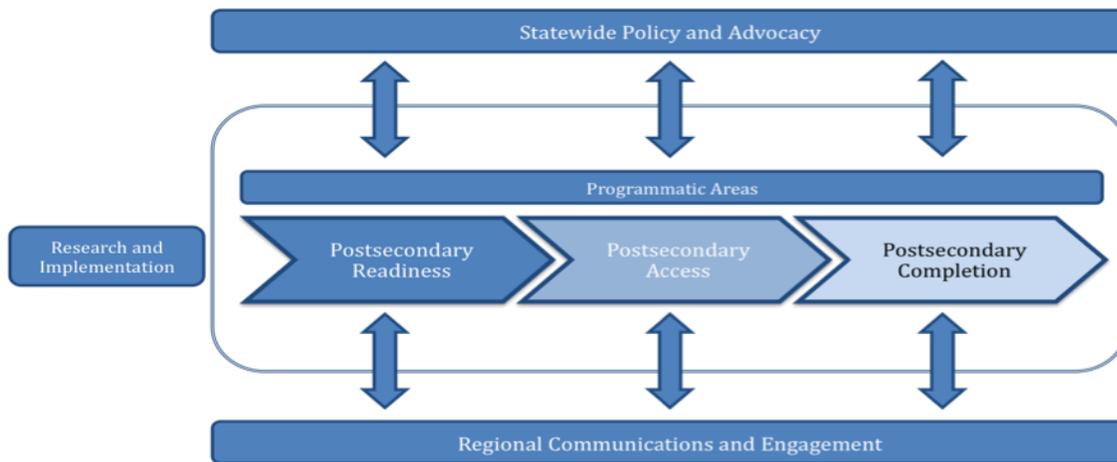
Educate Texas was created in 2003 as a public-private alliance to support education reform across the state. The common organizational goal focuses on significantly improving the postsecondary readiness of low-income students. The public and private partners that form the Educate Texas Alliance include: the Texas Education Agency (TEA), Office of the Governor, members of the Texas Legislature, Texas Higher Education Coordinating Board, Bill & Melinda Gates Foundation, Michael & Susan Dell Foundation, Communities Foundation of Texas, Greater Texas Foundation, National Instruments, and The Meadows Foundation. The Dallas-based Communities Foundation of Texas is the primary overseer of private funding, while state and federal funding is managed by TEA. These partners work directly with a number of K-12 districts, community colleges, and four-year institutions throughout the state.

The work of Educate Texas initially focused on a campus-by-campus strategy. Under this strategy, Educate Texas worked directly with individual school districts across the state in one of four areas: creation of an ECHS; establishing T-STEM Academies; breaking down large comprehensive high schools into smaller models (which included a redesign model), and what we called New School/ Charter Schools (NSCS). Results from a five-year external evaluation found that the redesign schools that did not follow a specific model (excluding T-STEM and ECHS) were overall less effective, with only a few that consistently applied a specific instructional approach showing success. The models with more defined structures, the T-STEM Academies and ECHSs, all showed positive results against their comparison schools.

In response, Educate Texas created a new strategic plan to improve and scale its most successful programs and better leverage the Alliance partners. A large part of the new strategy was to better align efforts and supports, scaling models at the district and regional levels (rather than school-by-school), backwards mapping the scaling effort from the workforce back down through college and the K-12 system, and providing better clarity around implementation of the models.

The graphic below illustrates how we conceptualize that entire continuum by improving postsecondary readiness, access, and completion through: 1) creating and supporting clear models; 2) testing their effectiveness; 3) creating alignment and new knowledge through community engagement; and 4) informing statewide policy.

What we have learned through our past work is that all of these elements are essential for creating real traction and sustainability toward postsecondary improvement across our state.



Translating these activities into action, the focus areas are:

A. Postsecondary Readiness

Focusing the K-12 system on implementing rigorous, college-ready school programs and instruction from pre or K to the 12th grade.

B. Postsecondary Access and Success

Fostering successful transitions and completion for Texas students to a two-year, four-year college or technical school and/or the workforce.

C. Unified Research, Policy, and Partnership Network

Informing Texas policymakers, educators, community and business leaders and philanthropic partners on research and promising practices to improve college; and strengthening the role of Educate Texas as a statewide public-private education intermediary with state entities and private philanthropy.

This multi-agency approach continues to be important in order to create the right conditions for our successful programs. To illustrate how this strategy applies to ECHS and T-STEM programs, the next section will explain the important components of the models, and the supports in place to scale and sustain them.

Early College High School Overview

The Early College High School (ECHS) model has been an important tool for improving college readiness for students who have not traditionally done well in school. For those not familiar with the model, ECHSs are small schools that allow students to simultaneously earn a high school diploma and either an Associate’s degree or up to 60 college credit hours while still in high school. Designed for underserved students (including low-income, first generation, and minority students), ECHS campuses are located on or in close proximity to a college campus. By providing students with a college preparatory curriculum, these schools help increase high school graduation rates while also preparing students for college and skilled careers.

Creating a successful ECHS requires increasing academic rigor, developing courses that focus on career and technical skills, forging partnerships with higher education institutions, and convincing all

stakeholders – particularly students and parents – that college and skilled careers are a desirable, viable and obtainable option. Because ECHS programs require supportive policies that allow students to earn credits that can transfer seamlessly into college, it is a model that cannot be easily supported through one lone school, organization, or agency.

ECHS Implementation in Texas

Educate Texas is the intermediary organization in the state that supports ECHS campuses by aligning the work of influential public and private entities. In other states, that intermediary is Jobs for the Future (JFF), which is an important partner to us through the provision of tools, training, and support.ⁱⁱ While the Educate Texas Alliance includes a number of public and private organizations, the two partners that collaborate to provide direct service to schools are the Texas Education Agency (TEA) and Educate Texas through Communities Foundation of Texas (CFT). As a philanthropic organization, CFT and the Educate Texas foundation partners have the ability to introduce and pilot innovative new ideas and projects, and to connect to other funders, communities, and business. On the practice and policy side, TEA is in position to identify and remove barriers at the state level, and scale projects across the more than 1,200 school districts in the state.

In addition to connecting all the partners, Educate Texas provides information to policymakers to create a supportive college environment for earning and transferring college credits, for example, and fosters partnerships with area businesses and higher education agencies to align education and workforce needs. Because each organization makes a unique contribution that complements the efforts of its partner, this public-private alliance is greater than the sum of its parts.

Scaling Beyond Schools

Scaling the ECHS model within our new strategy to reach more students, create equity, and align appropriate resources meant moving beyond a school-by-school approach. To ensure the strength of the model remained consistent, a major part of our scaling efforts focused on providing clear guidelines on how to change instruction and expectations to ensure students can access their choice postsecondary path. For schools, it meant adopting career pathway courses and changing teaching and learning. For students and families, it meant learning about postsecondary options and how to access them. Rather than having districts and schools figure out how to make those changes, ECHS adopters were given explicit program design and instructional guidelines to follow, as well as supports like coaches and professional development.

One way Educate Texas worked to improve implementation and scalability of the ECHS model was to convene several organizations to work on common elements that needed to be included in the model, particularly with the help of TEA and JFF. The result of that collaboration was the development of five guiding core principles:

- **Core Principle 1**
Commitment to serving students under-represented in higher education.
- **Core Principle 2**
Implementation by a local education agency, a higher education institution, and the community, all of whom are jointly accountable for student success.

- **Core Principle 3**
Joint collaboration between higher education and community partners to develop an integrated academic program so all students can earn one to two years of transferable college credit leading to college completion.
- **Core Principle 4**
Comprehensive supports for students to develop academic and social skills as well as the behaviors and conditions necessary for college completion.
- **Core Principle 5**
Collaboration with higher education, community partners, and intermediaries to create conditions and advocate for supportive policies that advance the early college movement.

These principles – along with the unique designation process managed by the Texas Education Agency to approve ECHS-designated schools – helps structure, maintain, and evaluate appropriate and consistent implementation of the model.

To lead instructional change for better postsecondary preparation in classrooms, Educate Texas adopted JFF’s Common Instructional Framework. The Common Instructional Framework is an important tool used to help students gain the necessary skills for college-level work. The six strategies in the Framework include: collaborative group work; writing to learn; literacy groups; questioning; classroom talk; and scaffolding. When asked how the Framework changed what was happening in classrooms, Alma Garcia, ECHS project lead for Educate Texas, stated, “It adds coherence and uniformity. The level of questioning and engagement has greatly increased and is consistent across classrooms; students and teachers are listening and speaking a common language.”

Scaling ECHS to the Regional Level

The El Paso region provides a great example of how a single school prompted the scaling of the ECHS model to the regional level. El Paso is a border city in West Texas that is 78 percent Hispanic, with about a quarter of its residents living in povertyⁱⁱⁱ. When 2003-04 data revealed that 98 percent of El Paso’s first-time college students tested for at least one remedial course, a focused regional movement (led largely by El Paso Community College) began to target the improvement of college readiness for the region. Around 2006, that movement resulted in the creation of two simultaneous efforts; the opening of Mission ECHS with the support of Educate Texas and TEA; and a regional collaborative led by El Paso Community College (EPCC) and supported by Educate Texas, resulting in the establishment of four additional ECHS campuses.

Mission ECHS

Mission Early College High School opened in 2006 with a grant from Educate Texas through a partnership between EPCC and the Socorro Independent School District. Since that time, Mission ECHS has held the highest accountability rating in Texas, “Exemplary.” The school’s 470 students are primarily Hispanic at 91 percent, with the remaining 5 percent being White, 1 percent African American, and 3 percent “other.” Approximately 65 percent of the students are defined as Economically Disadvantaged.^{iv} Their summary passing rates (grades 9-12) for the 2010-2011 school year are 99 percent in English Language Arts, 98 percent in Math, 99 percent in Science, and 99 percent in social studies.

Mission ECHS was founded on the belief that high school students from diverse backgrounds are able to complete challenging college courses. Associates degrees currently available for students to study are too numerous to list, but provide many avenues to promising careers. The associates degree students earn are fully transferrable to four-year colleges and universities endorsed by TEA.

The El Paso College Readiness Consortium

The El Paso Area College Readiness Consortium grew around the same time as the opening of Mission ECHS. Partners included EPCC, the University of Texas at El Paso, and twelve El Paso-area school districts. It was initiated through an earlier project funded by the Lumina Foundation, called “Achieving the Dream,” which focused on preparing more students for postsecondary schools at a faster rate by reducing the number of hours spent in remedial courses. Overall, the goal was to align K-14 expectations and outcomes.

Mission ECHS became an important part of that work, helping compress the postsecondary timeline even further by allowing students to earn up to 60 hours of transferable college credits while in high school. Leaders at EPCC initially only planned to open one school. However, once they realized what it meant for student success, they began to expand their efforts.

Motivated by the success seen at Mission ECHS, other local school districts approached the college about partnering to open additional early college campuses. This led the creation of Valle Verde ECHS with Ysleta ISD in 2007. One year later, the college opened two more schools: Northwest ECHS with Canutillo ISD, and Transmountain ECHS in partnership with El Paso ISD. In addition to the ECHSs, both schools also house separate Texas Science, Technology, Engineering and Mathematics (T-STEM) Academies.

Sparked by visits and collaboration by two Educate Texas foundations within the Alliance, in 2010, the college opened Cotton Valley ECHS in collaboration with three rural districts – Fabens, Tornillo, and Ft. Hancock ISDs. In 2012, EPCC is planning to open its sixth early college in partnership with Clint ISD.

STEM in Texas

The Texas Science, Technology, Engineering and Mathematics (T-STEM) initiative was designed to put students on a career path within the four specified fields. The program comprises of schools or “Academies,” professional development centers, and networks designed to improve instruction and academic performance in science and mathematics-related subjects in schools. T-STEM Centers are located at universities and regional education service centers, and are designed to assist T-STEM Academies through the development of materials, professional development, and coordination with business partners. The T-STEM Network serves as a large T-STEM “learning community,” and connects to the national STEM Network.

The cornerstone of T-STEM education is student engagement, exploration, and innovation. T-STEM lessons are designed through project-based learning that applies real-world concepts. Project-based learning is difficult when first introduced to teachers and students, as it marks a huge departure from traditional Socratic “sit and get” lessons or worksheets. Subsequently, the earlier and more training teachers and students receive on the model, the better they are able to apply the higher analytic concepts associated with the model.

Similar to an ECHS, T-STEM Academies can apply for and receive designation to belong to the T-STEM network through TEA. In addition to the requirements in the designation application, the T-STEM Design Blueprint helps Academies create and assess implementation of the crucial elements of the model, which address seven critical areas for success: mission-driven leadership; school culture and design; student outreach, recruitment and retention; teacher selection, development and retention; curriculum, instruction, and assessment; strategic alliances; and academy advancement and sustainability. The seven elements in the Blueprint are further detailed into sub-tasks within a rubric that measures implementation stages from developing (novice) to role model (an expert). The nuances of the tool help educators measure and operationalize the improvement process.

Teachers at T-STEM Academies receive specialized training through T-STEM Centers and through training opportunities sponsored and produced by Educate Texas. T-STEM Centers, which are located at universities and regional education service centers throughout the state, assist T-STEM schools in a number of ways including: designing innovative STEM curricula; delivering professional development; and creating strategic partnerships with businesses and higher education institutions. The Centers all use a set of core professional development modules that provide T-STEM teachers with training in project-based learning, gender equity, and the T-STEM Design Blueprint.

Each Center also provides its own specialty offerings, ranging from rocketry (Texas Tech T-STEM Center) to biomedicine (Southeast Regional T-STEM Center at University of Texas, Medical Branch, and Galveston).^v Through specialized professional development, the T-STEM Centers seek to improve the performance of all math and science teachers across the state of Texas.

Scaling T-STEM in the Texarkana Independent School District

The Texarkana Independent School District (ISD) is one of the first districts in Texas to embark on scaling STEM across its entire district. Because the T-STEM model represents a strong departure from traditional teaching and learning, spreading STEM opportunities to more students and in earlier grades is an ideal approach to creating student success. Not only is this approach somewhat unique, Texarkana is not a school district where many would suspect this innovative approach to be launched.

Texarkana ISD is an urban school district located in the Northeast corner of Texas. The district encompasses an area of 34 square miles, literally straddles two states (Texas and Arkansas), and shares a border with the Texarkana, Arkansas, public schools. For the 2010-2011 school year, the district achieved a rating of “Academically Acceptable,” meaning it performs one level above the “Unacceptable” rating (the lowest category) according the state’s accountability system.

The district is diverse, with 65.6 percent of the student body defined as Economically Disadvantaged, and 43 percent are African American, 11.3 percent Hispanic, 38.1 percent White, 1 percent Asian, and 3 percent two or more races.^{vi} Although this aggregate accountability rating may seem to not merit selection for a case study, the district’s strength is in the improvement of individual schools and innovative pathway to a strong high-yield district-wide reform strategy.

While the city has traditionally been known to have fast growth, it has also seen a reduction in labor force from several major companies, including Cooper Tire, International Paper, and the Red River Army Depot. Seeing a need to address their changing workforce needs, improve academic performance, and

provide students with greater postsecondary opportunities, the district developed a ten-year plan to incorporate innovation and increase rigor in its programs. The first step toward this goal through T-STEM was to open the Martha and Josh Morriss Math and Engineering Elementary School.

Scaling the Model

Morriss opened in 2008 with 387 students, and provided state of the art instructional opportunities in math, engineering, and technology in close partnership with Texas A&M University – Texarkana, Texarkana College of Arts & Sciences and Education, and the College of Engineering. The mission of Morriss is to offer innovative engineering curriculum along with an accelerated mathematics program, and serve as a national model for engaging young students in STEM education.

In 2010, Morriss was labeled “Exemplary,” the highest rating in the state’s accountability system. Morriss students have historically performed much higher than the district average, with passing rates of 100 percent for grades 3-5 in both reading and math since 2008; and 100 percent in 5th grade science.

After the school’s first year, Educate Texas became involved with Morriss to help refine professional development and provide additional T-STEM support. While impressed with the school’s accomplishments, Educate Texas asked Texarkana leaders to consider how they could offer a similar program to more disadvantaged students (Morriss was serving wealthier, less diverse students than the average district population and is a magnet school with an application process [12 percent Economically Disadvantaged and 82.4 percent white]).

The following year, the district identified two schools (one middle school and one high school) that reflected a much higher level of poverty and diversity. The district also began plans for a Title I T-STEM elementary school. The schools fit into the district’s ten-year plan, which aimed to develop students who will become the community’s next workforce members - “problem solvers, innovators, and inventors who are self-reliant and able to think logically.”

Texarkana ISD is now scaling the T-STEM model district-wide through its partnership with Educate Texas and Texas A&M University – Texarkana. In addition to the high school T-STEM Academy, the middle school is divided into two academies – STEM, and Arts and Communication. Additionally, teachers across the district receive extensive professional development in STEM instructional approaches.

Texarkana ISD has not only begun to scale T-STEM across the district, it has also prompted the development of similar T-STEM programs in different states. Visitors from all over the country have visited schools in Texarkana, particularly the first elementary school - to learn about and replicate the model.

Increasing Academic Rigor and Expectations

In addition to scaling the model to other schools, Texarkana has also focused on incorporating elements of the STEM model in all aspects of teaching and learning. STEM instruction requires that teachers are able to plan and implement cross-disciplinary instructional units that are student-centered and project-based. While the result is extremely engaging collaborative student projects, planning those projects and connecting them to core-subject curriculum can be quite challenging. Through courses funded by Texas A&M University, Texarkana teachers are immersed in the methods (such as conceptual, hands-on, and project-based learning) that are used in the T-STEM Academy. This not only creates a common

framework for teachers and students, but also sets expectations for the level of rigor that is required in the T-STEM Academy.

To ensure that students were able to handle the academics required of a high school T-STEM Academy, the district adjusted its curriculum throughout all grades. Using a model they call “Link, Learn, Extend,” the elementary grades introduce concepts for the current as well as next grade level. For example, a kindergarten student is introduced to kindergarten and first grade math in the same year. When the student enters first grade, the teacher links to what was taught in kindergarten (first grade standards), ensures that they learn second grade math and, if the student is ready, and extends to third grade math. This model ensures that the mathematics curriculum is accelerated, yet taught to mastery with no gaps in vertical alignment.

After three years of Link, Learn, Extend, sixth grade students were completing eighth grade math and the approach was deemed so successful that it became the model for teaching math throughout the district. Additionally, the district has moved Algebra I down to seventh grade for students that are academically ready so that they can complete pre-Calculus by the tenth grade.

College Level Experience and Career Connections

While some schools do an effective job of connecting secondary instruction to college and skilled careers, that focus is rarely present in the lower grades. However, to better align to their career focus on engineering, Morriss Elementary curriculum coaches conducted research on the strengths and weaknesses of engineering students at the university level. They discovered engineering students often have high levels of academic performance, but are weak in presentation and communication skills. Confirming those findings, elementary students were told on a field trip to a local company that STEM employers seek engineers who can lead a team and articulate findings. As a result, district administrators decided that leadership and communication would become a major focus for STEM students.

Another way students practice communication and leadership skills is to serve as a “school ambassadors” taking visitors on tours and explaining what is happening in classrooms. In one of our visits, the ambassadors greeted us in the office, entertained our questions about their school and their interests, showed us student work, and guided us through the lesson we observed.

Discussion and Lessons Learned

The complex work of ensuring students are better prepared for college, see the value in pursuing college, and can access and succeed in their college choices requires a high level of collaboration and strategic alignment to leverage resources and yield lasting effects. Students in El Paso and Texarkana are excited about school because they see a connection to a future profession that interests them. Their opportunities to earn college credit for free in high school were paved through strong K-12/higher education partnerships, philanthropic support, assistance from state agencies, and a favorable policy environment that supports postsecondary access for all students.

Lessons learned from these two case studies and our other work within Texas point to the importance of multi-agency collaboration, and a new way of thinking about scaling beyond single school models. Those lessons are summarized below:

- Scaling quality education models means connecting the right partners to set favorable conditions for program success and sustainability. Those partners should include K-12 and higher education agencies, business, community, education practitioners, foundations, and support organizations (like JFF).
- Scaling beyond single schools requires commitment and coordination between top-level leadership in both K-12 and higher education systems. El Paso and Texarkana had strong support from their superintendents, school board, and higher education presidents.
- Scaling successful models requires explicit clarification on the necessary components and structure of the model itself, and guidance on how teaching and learning will change to improve the instructional core.
- Implementation improves with measurement and guidance tools like the ECHS and T-STEM designation process, the ECHS Common Instructional Framework, and T-STEM Blueprint.
- Strong partnerships require time. While it is difficult to balance a process that considers the opinions of different types of stakeholders, many of them assert that the “collective intellectual capital” and alignment gained is well worth the time.

Conclusion

While these two examples only scratch the surface of the interesting and innovative postsecondary work occurring in Texas, they provide a glimpse of how districts have worked to embed college and skilled career preparation into their programs to ensure students have all the necessary skills and opportunity to see themselves in a meaningful postsecondary experience. Academic rigor embedded in 21st century workforce skills; opportunities to experience and consider various types of careers; the presence of a college-going culture; and exposure to the expectations and skills needed to navigate and succeed through college and careers are all necessary elements for a solid postsecondary preparation. Putting all four elements together - particularly throughout a student’s K-12 experience - can provide students with the strongest preparation to become contributing members of their community.

ⁱ Note the term postsecondary in this article refers to both community colleges and four-year institutions.

ⁱⁱ Jobs for the Future (JFF) identifies, develops, and promotes education and workforce strategies for youth and adults. Working in over 43 states, JFF is focused on improving pathways leading from high school to college to family sustaining careers. For more information see www.jff.org.

ⁱⁱⁱ See El Paso Community College website on the El Paso Community College District at <http://www.achievingthedream.org/ABOUTATD/COLLEGEPROFILES/TEXAS/ELPASOCCDISTRICT/default.tp>.

^{iv} Based on their enrollment in the free and/or reduced-price lunch program (FRSL).

^v For more information on T-STEM academies and centers see <http://thsp.org/programs/t-stem-centers/>

^{vi} Texas Education Agency AEIS accountability report. See <http://ritter.tea.state.tx.us>.