Lessons Learned from Developing a Framework for Evaluating the Impact of CS Teacher Professional Development on CS for All Outcomes

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Objective

The national CS for All movement is predicated on the assertion that very few students in K-12, and particularly few women and students of color, have access to computer science in K-12 (Margolis, 2008). In response to this challenge, the NSF has made a large financial commitment to support the development of engaging CS curriculum and CS teacher professional development (National Science Foundation, 2016). However, large-scale, longitudinal measures of the impact of CS teacher professional development on the final outcome of interest--diverse student access to and participation in CS coursework in K-12 schools--is limited primarily to lagging indicators such as AP enrollment (Ericson & Guzdial, 2014)) or assessed through teacher and district surveys (desJardins & Martin, 2015) which don't necessarily capture all schools or teachers in a state systematically.

This paper discusses efforts to consistently define and measure longitudinal objectives in relation to The University of Texas at Austin's WeTeach_CS project, which focuses on CS teacher training, certification, and capacity building. Since 2015, WeTeach_CS researchers and practitioners have been developing a framework for analyzing statewide impact in CS with broadening participation in CS as the primary outcome . The paper discusses the process of defining statewide strategic objectives for K-12 CS Education access and participation, decision points related to data access and analysis, and recommendations for other states as they engage in similar efforts.

Theoretical framework

Our effort to build CS teacher capacity is as much a social innovation as it is technical challenge. The process by which outcomes/metrics and data analysis techniques were identified, prototyped, provided feedback, and iterated for improvement reflects a design thinking model for change (Razzouk & Shute, 2012). Quite often, assumptions, data collection techniques, and definitions underwent modification and evolution as they were tested against the field and the constraints of the data collection system. While the steps and stages of development outlined for this particular state by no means represent the only viable means for defining and measuring impact in other states, they may provide other researcher with guidance on strategies and decision making points to consider as they develop a framework for evaluating broadening participation in CS in their states.

Methods

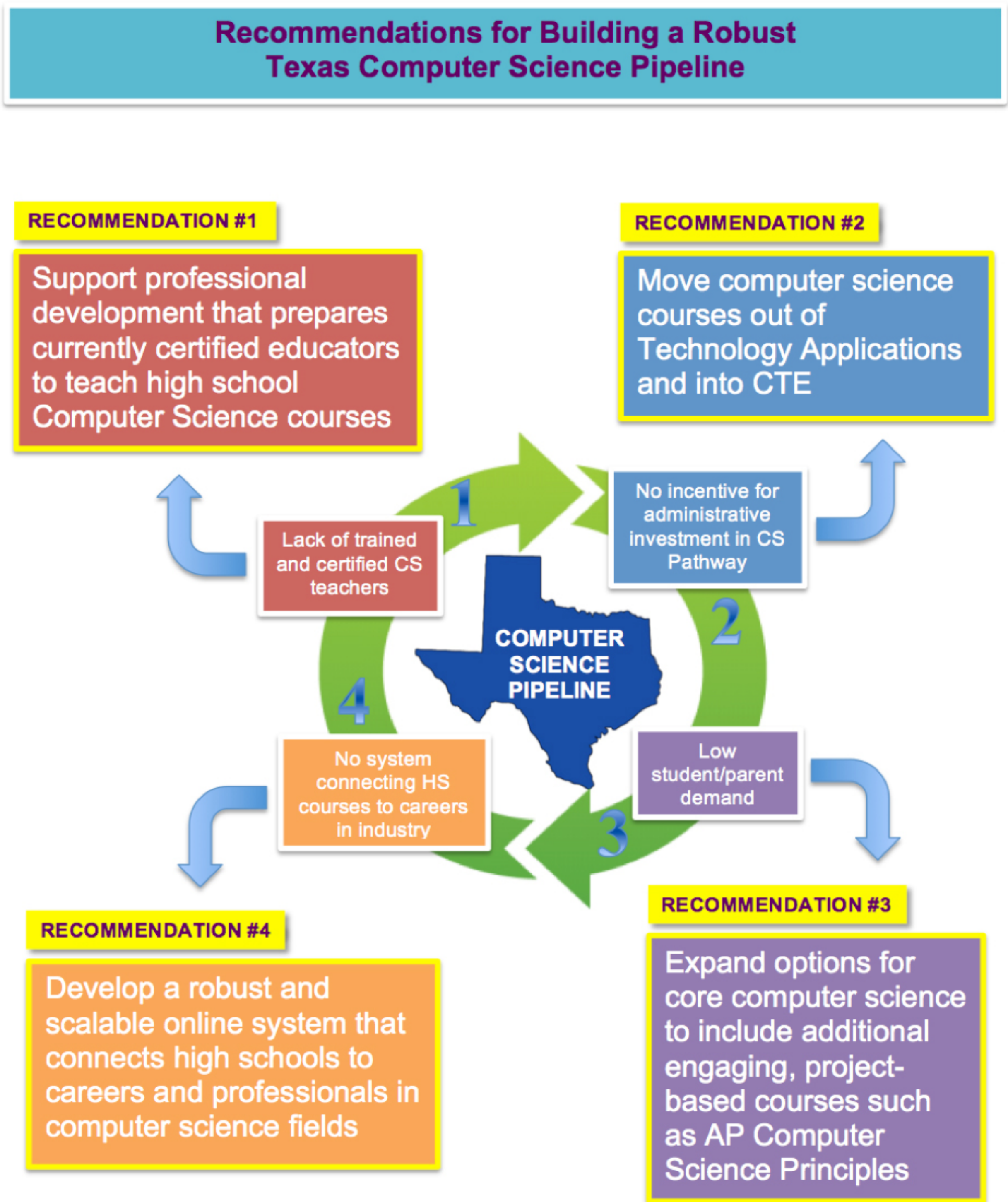
Development of statewide objectives and measures was the result of a multi-year, iterative process which included six key stages that advanced the goal of CS for All. These stages align with the Four-Stage Model for How to Change a State from the Expanding Computing Education Pathways (ECEP) project from NSF (ECEP, 2018). Most interesting, these steps were engaged in prior to the leaders in Texas becoming involved in ECEP, which lends independent credence to the ECEP model for developing long range advocacy and change in CS education. The six key stages included:

1. Convening of the Texas CS Task Force - 2014
2. Release of the K-12 Landscape Report - 2014
3. Launching of Texas Alliance for Computer Science Education - 2015
4. Funding of WeTeach_CS project at UT Austin - 2015
5. Transformation from TACSE to CS4TX for state-wide advocacy - 2016
6. Launch of the WeTeach_CS Measurement Project - 2016

The Texas CS Task Force was first convened on October 8, 2014, in partnership with the Austin Chamber of Commerce. It consisted of individuals representing a cross-section of stakeholders in CS education including CS teachers, CS professionals, university professors, school district instructional leaders, professional development providers, executive directors of the Texas Computer Education Association (TCEA) and the Career and Technical Association of Texas, and a staff member from a state legislative office. CS Task Force members provided advice and feedback that led to the development of the first landscape report for K-12 CS Education in Texas, *Building the Texas Computer Science Pipeline: Strategic Recommendations for Success* (Fletcher, 2014). This paper defined the current state of K-12 computer science education in Texas, outlined four primary barriers to developing a robust K-12 pipeline, and made recommendations for overcoming those barriers. These barriers and recommendations are summarized in Figure 1 and formed the basis of the first coordinated efforts to improve access to and participation in K-12 CS Education in Texas.

Following the publication of CS Pipeline whitepaper, an informal advocacy group, the Texas Alliance for Computer Science Education (TACSE) was formed in April of 2015 to educate the community about the findings of the whitepaper and advocate for the recommendations. After President Obama's announcement of the CS for All initiative of the White House in January of 2016, the founders of TACSE rebranded the local advocacy group, which had been based primarily in Austin, TX, into a statewide movement termed CS4TX to align with the national effort to broaden participation in computing in K-12. CS4TX Austin revitalized a dormant Austin Chapter of the Computer Science Teachers Association (CSTA) to connect more effectively to a national structure and also began to develop branches across the state to engage stakeholders beyond the Austin area. A state steering committee, consisting of four members, focused on grassroots expansion (Hal Speed), teacher professional development (Carol Fletcher), and advocacy (Caroline Joiner and Jennifer Bergland) provided overall direction for CS4TX efforts.

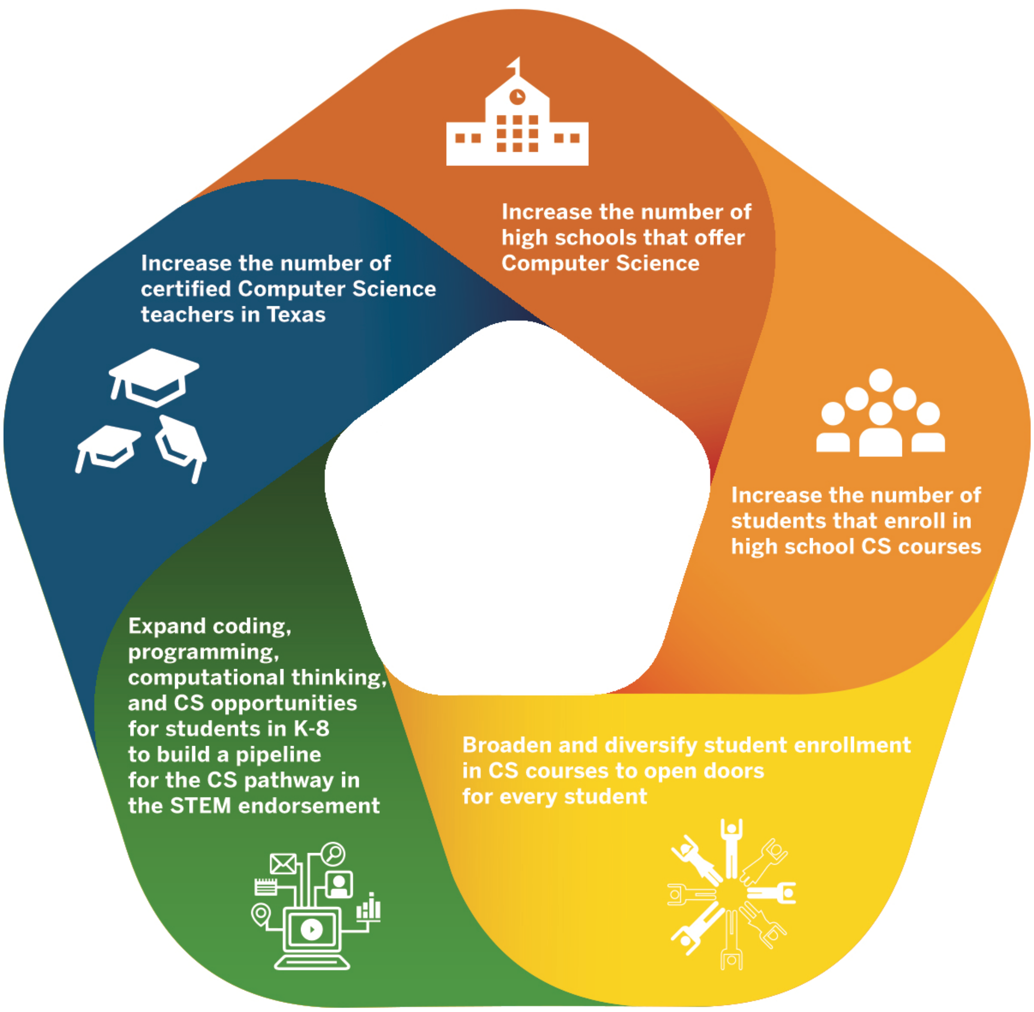
Figure 1: Barriers & Recommendations for Improving K-12 CS Education



Simultaneous to these informal advocacy efforts, the WeTeach_CS project was funded by the Texas Education Agency to scale up CS teacher professional development state-wide in 2015. WeTeach_CS leadership leveraged the advice and expertise of the CS4TX membership to refine the outcome measures that have guided the WeTeach_CS program. In addition, a survey was conducted of Central Texas school district administrators in 2015, in which they were asked to rank order their needs with regard to CS education. The number one need was for certified CS teachers.

Five key outcomes frame the WeTeach_CS project and have guided efforts to evaluate the changing landscape of K-12 CS education in Texas. While all of these outcome measures are not directly related to broadening participation, our logic model is predicated on the expectation that broadening participation must occur in concert with overall increases in access to and participation in K-12 CS.

Figure 2: WeTeach_CS Outcomes



1. Increasing the number of teachers certified to teach high school CS.
2. Increasing the number of high schools that offer CS courses.
3. Increasing the number of students that complete a CS course.
4. Broadening and diversifying the types of students that complete a CS course.
5. Expanding coding, programming, computational thinking, and CS opportunities in K-8

Outcomes 1-3 are necessary but not sufficient conditions for increased access to computing education for students who have been traditionally underserved in computing. Outcome four builds on the precursor conditions from improvement in teacher certification, high school offerings, and overall student enrollment that must be in place before equitable participation in computing courses can be measured.

The primary data source for this study is the Texas' Education Resource Center (TERC), a consolidated data center providing access to all K-12 Texas student data for research. TERC data can only be accessed by researchers who have submitted a research proposal that has been approved by the TERC. All data analysis must be conducted within the TERC, with no raw data leaving the data center. All TERC data are masked for FERPA compliance and final reports that result from TERC data analysis must be approved by TERC staff to ensure no individually identifiable information is shared or can be imputed by the manner in which final results are shared.

Results

Several key decision making points occurred for researchers as they began outlining strategies for measuring outcomes. Examples of these decision points and how researchers addressed them are discussed in this section to assist other states with a similar process. This involved achieving consensus on which secondary courses should "count" as computer science courses, what counts as a "high school" in determining the percentage of high schools that offer CS, how to measure underrepresented populations in CS while dealing with FERPA, and establishing consistent K-8 metrics across a state.

Defining Computer Science

One of the first challenges for researchers was to establish a clear and consistent consensus of what high school courses should "count" as CS courses when measuring what high schools are offering CS and who is enrolled. Initially, researchers used requirements which had been outlined by the Texas State Board of Education for Technology Applications courses which were required to be offered by every high school in the state. However, it soon became clear that these courses did not necessarily reflect the full range of courses that some might consider computer science and also included several courses that some individuals would not consider computer science.

In addition, some courses required a Grades 8-12 Computer Science teacher certification to teach them while others only required a Career and Technology Education (CTE) certification. For example, Computer Science I, required a CS certification to teach, but the CTE course Computer Programming, only required a CTE certification. Initially, researchers considered only "counting" the Computer Programming course if it was taught by a CS certified teacher, as this certification demonstrated a level of content expertise above and beyond that of a CTE certification.

Given the lack of consensus and consistency, researchers decided to crowdsource the process for defining which courses should "count" as CS to develop content validity. Researchers created a survey which listed 25 potential courses and included hyperlinks to their associated state standards (TEKS). Prefacing the survey, Tucker, et al.'s definition of computer science highlighted in the K-12 Computer Science Framework (2016) was provided to respondents to provide a consistent lens by which to judge the various courses. It defines computer science as "the study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society" (Tucker et. al, 2006, p.2). The survey was sent primarily to computer science teachers in Texas as well as CS professors and industry stakeholders from CS4TX. Respondents were asked to respond either yes or no to assess whether each course should be counted as computer science. Forty-two individuals responded to the survey. The initial 25 courses on the list were pared down to 16 courses which represented both Technology Applications and CTE. These 16 courses included:

1. Computer Science I
2. Computer Science II
3. Computer Science III
4. AP CS Principles
5. AP CS A
6. Computer Programming
7. Advanced Computer Programming
8. Fundamentals of Computer Science
9. Discrete Mathematics
10. Digital Forensics
11. Game Programming
12. IB CS H
13. IB CS SS
14. Mobile Applications Development
15. Robotics
16. Web Game Development

Counting students

A second decision making challenge came with counting students. Researchers needed to establish consistency in determining who was taking computer science courses. Some students take more than one course over four years of high school or within a year. Was the metric the number of students who completed one or more courses or the number of courses completed? Researchers determined that the primary goal was to measure how many students were completing a computer science course, not just how many total courses were taken and thus concluded that the number of students completing at least one course was the most appropriate measure to report.

Once it was determined that students would be counted, researchers then needed consensus on what criteria would be used to measure student engagement with a course. Fields in the TERC consisted of course enrollment, course completion, course credit, and course passing, all of which had different criteria and different numbers. For example, students may enroll in or even complete a course, without actually passing the course. In some instances, students were completing a course but not receiving official high school credit if the course was taken in Grade 8 rather than high school. These inconsistencies in the data in terms of how schools awarded credit for students who completed a course were deemed problematic over the long term.

While this didn't impact the counts for high school, it would impact the ability to track students throughout school to determine what percentage of graduates had taken one or more of the defined CS courses prior to graduation. As a result, researchers changed from students who received credit to students who passed the course.

Given the small numbers of Black, Latino, low-income, and female students enrolled in high school computer science, it was challenging to measure these trends while maintaining FERPA compliance. In the TERC, cell sizes smaller than five are masked. For a statewide measure, this is typically not a problem, but unpacking the data at a regional, district or school level could become challenging. As such, researchers chose to count underrepresented students of color by creating subgroups that collapsed all ethnicities who were not White or Asian into one group called Underrepresented Minority (URM) students. Because White and Asian students tend to be overrepresented in CS, this created a dichotomous variable that counts overrepresented and underrepresented students in terms of ethnicity.

Data regarding students is disaggregated currently by ethnicity, gender and socio-economic status. One goal of the data tracking process is to compare the percentage of students in each subgroup in computer science courses to the overall percentage of that subgroup in the general population of the students. Economically disadvantaged students were defined as those eligible for free or reduced lunch (FRL). Because student enrollment in FRL programs often decreases in high school, it was also important to compare the number of FRL students in computer science courses to the overall number of FRL students in high schools in Texas, not necessarily to the FRL percentage for students overall. For example, in Central Texas, 39% of high school students are eligible for FRL while the overall K-12 percentage of FRL students is 46%.

Counting teachers

Texas has multiple pathways for teachers obtain teacher certification. For those individuals who already hold an existing Texas certification in another subject, adding a CS certification can be accomplished by passing the computer science content certification exam. These individuals are counted separately in the State Board for Educator Certification records. Unfortunately, publically available data regarding teacher certification by pathway lack consistency, which requires researchers to utilize the TERC for tracking these numbers. However, rather than reporting the numbers directly categorized by pre-service vs. in-service pathways to certification, the TERC reports initial certification vs. additional certification. This can be problematic for certification renewals (which must occur every 5 years for those teachers not grandfathered in to lifetime certification), because renewals are not initial certifications but also are not required to complete a test. Researchers continue to examine the data to ensure that measures of teacher certification are accurate and indicate additional teachers available to provide instruction in high school CS.

Counting schools

To determine the number and percentage of high schools that have students enrolled in computer science courses, it is necessary to first define what "counts" as a high school. This process has been surprisingly difficult. In Texas, as likely in many other states, the definition of a high school is very important in the school accountability system because high schools are held to certain accountability standards that middle schools and elementary schools are not. As such, the number of schools actually defined as high schools by the Texas Education Agency is significantly lower than the number of schools who offer instruction to high school age students. For example, some schools are K-12, some serve students in grades 6-12, and some in grades 9-12. A complex set of accountability criteria for defining high schools can be found on the 2017 TEA Accountability Manual (TEA, 2017). Since our goal was to measure whether schools serving high school age students were giving them an opportunity to enroll in computer science courses, WeTeach_CS researchers have chosen a more broad definition of high schools to include any school that enrolls students in any grade from Grade 9 to Grade 12. This definition means that we will not necessarily capture every school that offers CS courses, because some middle schools offer courses such as Fundamentals of Computer Science in Grade 8 for high school credit. However, when counting the number of graduates who complete a CS course for HS credit, those students are counted.

Example Results

The Appendix contains an example of how results have been reported based on the criteria and decisions outlined in this paper. Researchers have aggregated the data for all high schools and districts for Region 13 in Central Texas, one of 20 Educational Service Center Regions in the state.

Significance

Given the recent increased investment in building CS teacher capacity, it is vital that states establish consistent long-range goals and metrics for measuring access to and participation in K-12 computer science. Although the design process appears simple on the surface, it is actually incredibly complex, requiring consensus among researchers, practitioners, policymakers, and business partners. Individuals engaged in similar efforts across the nation can find value in the lessons learned in WeTeach_CS to guide their own decision making. Measuring the impact of teacher professional development on the ultimate goal of broadening diversity in K-12 computing is more than an academic exercise. This process is key to sustaining political and financial support from policymakers and practitioners. Individuals who are committed to equity must demonstrate a return on investment both in the short and long term to sustain the current momentum and support for the vision of CS for All.

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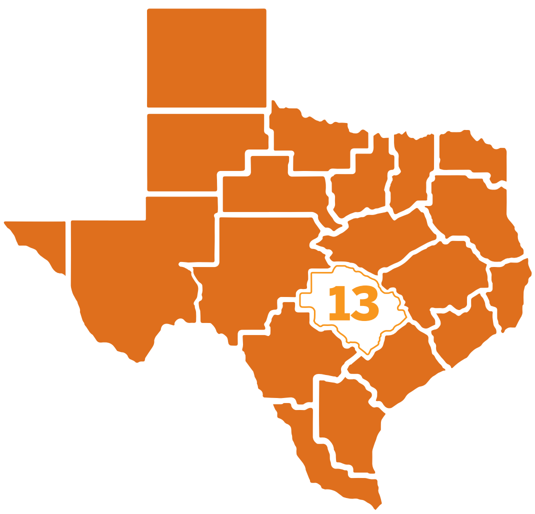
APPENDIX

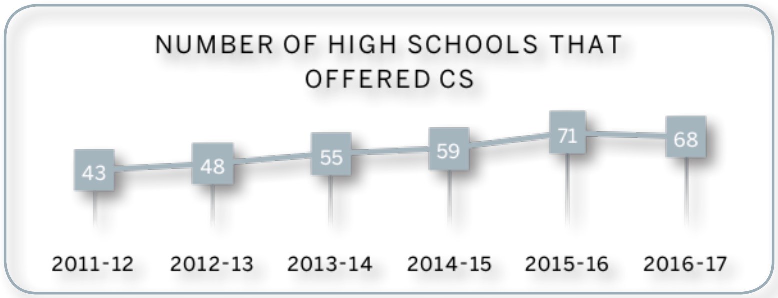
REGION 13

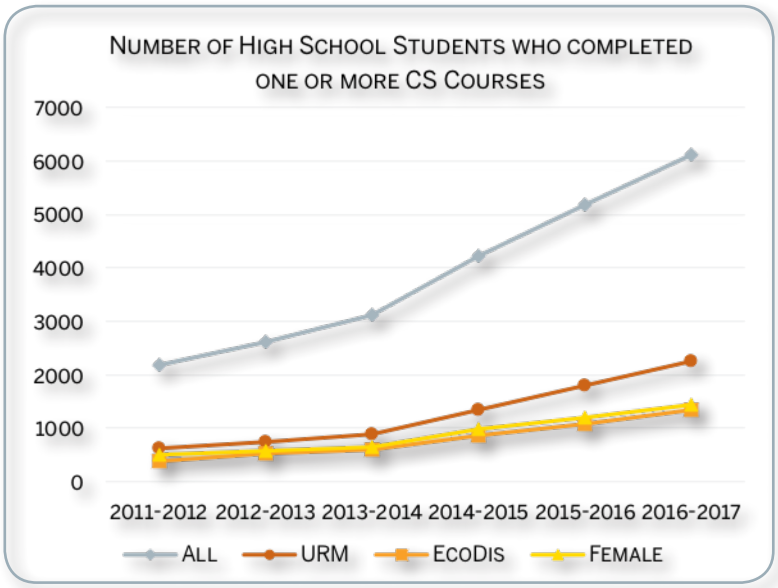
POSITIVELY AFFECTING THE FUTURE

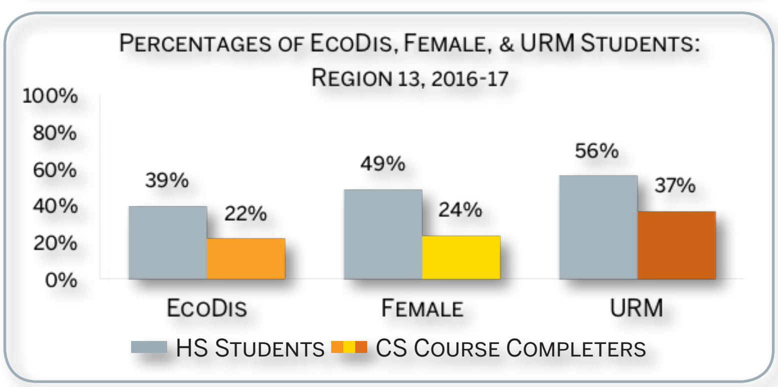
STEM CENTER

CS PROFILE: REGION 13









Regional Profile 2016-17

Total Number of Districts: **68**

Total Number of High Schools (HS): **174**

Total Number of HS Students: **109,797**

Percentage of HS Students who completed a Computer Science (CS) Course: **5.56%***

Graph Legend

Overall Student Population (**All**)
Under-represented Minority Population (**URM**)
Economically Disadvantaged Population (**EcoDis**)
Female Population (**Female**)

* Reflects the number of high school students who took one or more of the following CS courses: APCSA, APCSP, CS1, CS2, CPrg, ACPrg, CS3, CSF, DFren, Dscrt, GPrg, IBCSH, IBCSS, MDev, Robo, WbGDev

CS PROFILES: REGION 13 HIGH SCHOOLS

District/ Campus Name	Total HS Students	Total CS Students	APCSA	APCSP	CS1	CS2	CPrg	ACPrg
AUSTIN ACHIEVE PUBLIC SCHOOLS	**226**	**191**	**20**	**0**	**171**	**0**	**0**	**0**
AUSTIN ACHIEVE PUBLIC SCHOOLS	226	191	20		171			
AUSTIN ISD	**21346+**	**697**	**153+**	**19**	**133+**	**47+**	**142+**	**37**
AKINS H S	2680	60	36			27		
ALTERNATIVE LEARNING CENTER	74							
ANDERSON H S	2217	134	*				84	20
AUSTIN H S	2145	89	15	19	48			
AUSTIN ST HOSPITAL	13							
BOWIE H S	2894	105			61	20		
CROCKETT H S	1515	19			*		<5	
EASTSIDE MEMORIAL AT THE JOHNSTON	553	24			*	<5		
GARZA INDEPENDENCE H S	205	5			<5			
GRADUATION PREP ACADEMY LANIER	122							
GRADUATION PREP ACADEMY TRAVIS	157							
INTERNATIONAL H S	261							
LANIER H S	1659							
LASA H S	1111	196	89				58	17
LBJ HIGH SCHOOL	804							
LEADERSHIP ACADEMY	40							
MCCALLUM H S	1759	24			24			
PHOENIX ACADEMY	31							
REAGAN H S	1255							
RICHARDS SCH FOR YOUNG WOMEN LEADE	364	13	13					
ROSEDALE	111							
TRAVIS COUNTY DAY SCHOOL	9							
TRAVIS COUNTY J J A E P	<5							
TRAVIS COUNTY JUVENILE DETENTION C	35							
TRAVIS H S	1332	28					*	
BARTLETT ISD	**104**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
BARTLETT SCHOOLS	104							
BASTROP ISD	**3070**	**38**	**0**	**0**	**5**	**0**	**33**	**0**
BASTROP H S	1329	38			5		33	
CEDAR CREEK H S	1479							
COLORADO RIVER COLLEGIATE ACADEMY	161							
GATEWAY SCH	19							
GENESIS H S	82							
BLANCO ISD	**315**	**<5**	**<5**	**0**	**<5**	**<5**	**0**	**0**
BLANCO H S	315	<5	<5		<5	<5		
BURNET CISD	**923**	**7**	**0**	**0**	**0**	**0**	**7**	**0**
BURNET H S	893	7					7	
QUEST H S	30							
CEDARS INTERNATIONAL ACADEMY	**38**	**16**	**8**	**0**	**0**	**0**	**12**	**0**
CEDARS ACADEMY NEXT GENERATION H S	38	16	8				12	
CHAPARRAL STAR ACADEMY	**115**	**15**	**0**	**0**	**<5**	**0**	*****	**9**
CHAPARRAL STAR ACADEMY	115	15			<5		*	9
COMFORT ISD	**339**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
COMFORT H S	339							
DEL VALLE ISD	**3150**	**29**	**5**	**0**	**5**	**0**	**0**	**0**
DEL VALLE H S	2995	29	5		5			
DEL VALLE OPPORTUNITY CTR	155							
DIME BOX ISD	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DIME BOX SCHOOL	52							
DRIPPING SPRINGS ISD	**1752**	**82**	**<5**	**0**	**<5**	**0**	**58**	**18**
DRIPPING SPRINGS H S	1752	82	<5		<5		58	18
EANES ISD	**2686**	**436**	**266**	**53**	**37**	**90**	**0**	**0**
ADULT TRANSITION SERVICES	27							
WESTLAKE H S	2659	436	266	53	37	90		
EAST AUSTIN COLLEGE PREP	**363**	**29**	**0**	**0**	**0**	**0**	**0**	**0**
THE EAST AUSTIN COLLEGE PREP AT ML	363	29						
ELGIN ISD	**1301+**	**42**	**0**	**0**	**0**	**0**	**28**	**14**
BASTROP COUNTY JUVENILE BOOT CAMP	<5							
ELGIN H S	1250	42					28	14
PHOENIX H S	51							
FAYETTEVILLE ISD	**77**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FAYETTEVILLE SCHOOLS	77							
FLATONIA ISD	**162**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FLATONIA SECONDARY	149							
WHISPERING HILLS ACHIEVEMENT CENTE	13							
FLORENCE ISD	**304**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

CS PROFILES: REGION 13 HIGH SCHOOLS

District/ Campus Name	Total HS Students	Total CS Students	APCSA	APCSP	CS1	CS2	CPrg	ACPrg
FLORENCE H S	304							
FREDERICKSBURG ISD	**1001**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
ALTER SCH	30							
FREDERICKSBURG H S	971							
GEORGETOWN ISD	**3581**	**247+**	**18**	**0**	**152+**	**0**	**0**	**0**
CHIP RICHARTE H S	74	<5			<5			
EAST VIEW H S	1552	71	6		42			
GEORGETOWN ALTER PROG	18							
GEORGETOWN H S	1927	176	12		110			
WILLIAMSON CO J J A E P	5							
WILLIAMSON CO JUVENILE DETENTION C	5							
GIDDINGS ISD	**593**	**24**	**<5**	**0**	*****	**0**	**0**	**0**
GIDDINGS H S	593	24	<5		*			
GONZALES ISD	**789**	**53**	**0**	**0**	**42**	*****	**0**	**0**
GONZALES H S	789	53			42	*		
GRANGER ISD	**129**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRANGER SCHOOL	129							
HARMONY SCIENCE ACADEMY (AUSTIN)	**893**	**100**	**21**	**9**	**16**	**0**	**48**	**9**
HARMONY SCHOOL OF EXCELLENCE - AUS	276							
HARMONY SCHOOL OF POLITICAL SCIENC	117	16			16			
HARMONY SCIENCE ACADEMY-PFLUGERVIL	500	84	21	9			48	9
HARPER ISD	**196**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HARPER H S	196							
HAYS CISD	**5433+**	**275**	**49**	**45**	**72**	**26**	**85**	**<5**
HAYS CO JUVENILE JUSTICE ALT ED PR	<5							
JACK C HAYS H S	2736	143	49	34			60	
LEHMAN H S	2500	132		11	72	26	25	<5
LIVE OAK ACADEMY	197							
HUTTO ISD	**1903+**	**45**	**14**	**0**	**31**	**0**	**0**	**0**
HUTTO H S	1903	45	14		31			
WILLIAMSON COUNTY ACADEMY	<5							
WILLIAMSON COUNTY DETENTION CENTER	<5							
JARRELL ISD	**404**	**27**	**0**	**0**	**0**	**0**	*****	**<5**
JARRELL H S	404	27					*	<5
JOHNSON CITY ISD	**247**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LYNDON B JOHNSON H S	247							
KATHERINE ANNE PORTER SCHOOL	**160**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
KATHERINE ANNE PORTER SCHOOL	160							
KI CHARTER ACADEMY	**72**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
KI CHARTER ACADEMY	72							
KIPP AUSTIN PUBLIC SCHOOLS INC	**891**	**74**	**0**	**0**	**74**	**0**	**0**	**0**
KIPP AUSTIN BRAVE	198							
KIPP AUSTIN COLLEGIATE	693	74			74			
LA GRANGE ISD	**607**	**22**	**<5**	**0**	**11**	**0**	**0**	**0**
LA GRANGE H S	607	22	<5		11			
LAGO VISTA ISD	**433**	**29**	**<5**	**0**	**0**	**0**	**16**	*****
LAGO VISTA H S	433	29	<5				16	*
LAKE TRAVIS ISD	**2828**	**330**	**51**	**139**	**0**	**0**	**0**	**0**
LAKE TRAVIS H S	2828	330	51	139				
LEANDER ISD	**11683**	**876**	**206**	**75**	**489**	**0**	**0**	**0**
CEDAR PARK H S	2017	140	28	25	85			
GLENN H S	665	32			19			
LEANDER H S	2125	153	41	7	74			
NEW HOPE H S	50							
ROUSE H S	1991	117	25	24	41			
VANDEGRIFT H S	2464	244	63		160			
VISTA RIDGE H S	2357	190	49	19	110			
WILLIAMSON CO ACADEMY	7							
WILLIAMSON COUNTY DETENTION CENTER	7							
LEXINGTON ISD	**270**	**<5**	**0**	**0**	**0**	**0**	**<5**	**<5**
LEXINGTON H S	270	<5					<5	<5
LIBERTY HILL ISD	**1104+**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LIBERTY HILL H S	1104							
WILLIAMSON CO ACADEMY	<5							
LLANO ISD	**538**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LLANO H S	538							
LOCKHART ISD	**1546**	**20**	**0**	**0**	**0**	**0**	*****	**<5**
LOCKHART H S	1524	20					*	<5
LOCKHART PRIDE H S	22							

CS PROFILES: REGION 13 HIGH SCHOOLS

District/ Campus Name	Total HS Students	Total CS Students	APCSA	APCSP	CS1	CS2	CPrg	ACPrg
LULING ISD	**399**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
LULING H S	399							
MANOR ISD	**2278**	**140**	**0**	**37**	**0**	**0**	**0**	**0**
MANOR EXCEL ACADEMY	61							
MANOR H S	1826							
MANOR NEW TECHNOLOGY HIGH	391	140		37				
MARBLE FALLS ISD	**1247**	**29**	**8**	**0**	**0**	**0**	**21**	**0**
FALLS CAREER H S	45							
MARBLE FALLS H S	1202	29	8				21	
MCDADE ISD	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MCDADE H S	28							
MERIDIAN WORLD SCHOOL LLC	**237**	**11**	**0**	**0**	**11**	**0**	**0**	**0**
MERIDIAN WORLD SCHOOL LLC	237	11			11			
NAVARRO ISD	**583**	**11**	**0**	**0**	**0**	**0**	**11**	**0**
NAVARRO H S	583	11					11	
NEW BRAUNFELS ISD	**2454**	**111**	**70**	**0**	**0**	**0**	**27**	**20**
NEW BRAUNFELS H S	1738	111	70				27	20
NEW BRAUNFELS H S NINTH GRADE CENT	655							
NEW BRAUNFELS MIDDLE	9							
THE NBISD LEARNING CENTER	52							
NIXON-SMILEY CISD	**301+**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
NIXON-SMILEY CISD DAEP	<5							
NIXON-SMILEY H S	301							
NYOS CHARTER SCHOOL	**257**	**10**	**0**	**0**	**0**	**0**	**10**	**0**
NYOS CHARTER SCHOOL	257	10					10	
PFLUGERVILLE ISD	**7228+**	**455**	**97**	**81**	**142**	**38**	**33**	**0**
HENDRICKSON H S	3258	163	38	24	59	17		
JOHN B CONNALLY H S	1884	115	15	12	37		33	
PFLUGERVILLE H S	2086	177	44	45	46	21		
TRAVIS CO J J A E P	<5							
PRAIRIE LEA ISD	**49**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PRAIRIE LEA SCHOOL	49							
ROUND ROCK ISD	**14450**	**1381**	**509**	**302**	**312**	**0**	**0**	**0**
CEDAR RIDGE H S	2721	189	68		104			
MCNEIL H S	2640	176	46	114				
ROUND ROCK H S	3201	272	98	48	87			
ROUND ROCK OPPORT CTR DAEP	93							
RRISD EARLY COLLEGE H S	109							
STONY POINT H S	2629	126	35		73			
SUCCESS H S	357							
WESTWOOD H S	2678	618	262	140	48			
WILLIAMSON CO J J A E P	8							
WM S LOTT JUVENILE CTR	14							
ROUND TOP-CARMINE ISD	**83**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
ROUND TOP-CARMINE H S	83							
SAN MARCOS CISD	**2346+**	**54**	**7**	**0**	**23**	**24**	**0**	**0**
HAYS CO JUVENILE JUSTICE ALTERNATI	<5							
SAN MARCOS H S	2346	54	7		23	24		
SCHULENBURG ISD	**254**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
SCHULENBURG SECONDARY	254							
SEGUIN ISD	**2084**	**53**	**8**	**0**	**39**	**<5**	**8**	**0**
JUVENILE DETENTION CENTER	10							
LIZZIE M BURGES ALTERNATIVE SCHOOL	22							
MERCER & BLUMBERG LRN CTR	103							
SEGUIN H S	1949	53	8		39	<5	8	
SMITHVILLE ISD	**524**	**<5**	**0**	**0**	**0**	**0**	**0**	**0**
SMITHVILLE H S	524	<5						
TAYLOR ISD	**1016+**	**38**	**0**	**38**	**0**	**0**	**0**	**0**
LOTT JUVENILE DETENTION CENTER	<5							
TAYLOR H S	1016	38		38				
WILLIAMSON CO JJAEP	<5							
TEXAS EMPOWERMENT ACADEMY	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TEXAS EMPOWERMENT ACADEMY	6							
THE EXCEL CENTER	**226**	**10**	**0**	**0**	**0**	**0**	**0**	**0**
EXCEL CENTER LOCKHART	13							
THE EXCEL CENTER	213	10						
THE EXCEL CENTER (FOR ADULTS)	**148**	**29**	**0**	**0**	**0**	**0**	**0**	**0**
THE EXCEL CENTER (FOR ADULTS)	148	29						
THORNDALE ISD	**197**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

CS PROFILES: REGION 13 HIGH SCHOOLS

District/ Campus Name	Total HS Students	Total CS Students	APCSA	APCSP	CS1	CS2	CPrg	ACPrg
THORNDALE H S	197							
THRALL ISD	**209**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
THRALL H S	209							
TRINITY CHARTER SCHOOL	**232**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AZLEWAY - BIG SANDY	14							
AZLEWAY - CHAPEL HILL	25							
AZLEWAY - WILLOW BEND	28							
PEGASUS SCHOOL	88							
TRINITY CHARTER SCHOOL	38							
TRINITY CHARTER SCHOOL	39							
UNIVERSITY OF TEXAS UNIVERSITY CHA	**347+**	**<5**	**0**	**0**	**0**	**0**	**0**	**0**
ANNUNCIATION MATERNITY HOME	9							
AUSTIN OAKS	9							
CATES ACADEMY	6							
CEDAR CREST	28							
GEORGE M KOZMETSKY SCHOOL	19							
GEORGETOWN BEHAVIORAL HEALTH INSTI	13							
HOUSTON BEHAVIORAL HEALTHCARE	<5							
LAUREL RIDGE	19							
METHODIST CHILDREN'S HOME	98	<5						
PATHFINDER CAMP	8							
PATHWAYS 3H CAMPUS	12							
SETON HOME	8							
SETTLEMENT HOME	24							
TNC CAMPUS (TEXAS NEUROREHABILITAT	24							
UNIVERSITY H S	10							
UNLIMITED VISIONS AFTERCARE	36							
UT - UNIVERSITY CHARTER SCHOOL AT	8							
UT - UNIVERSITY CHARTER SCHOOL AT	16							
WAELDER ISD	**81**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
WAELDER SCHOOL	81							
WAYSIDE SCHOOLS	**180**	**31**	**0**	**0**	**31**	**0**	**0**	**0**
SCI-TECH PREPARATORY	180	31			31			
WIMBERLEY ISD	**696**	**28**	**0**	**0**	**0**	**0**	**0**	**0**
WIMBERLEY H S	696	28						

* Data were masked in order to comply with FERPA regulations.