



# 2014 Biennial Report



Tennessee Council for  
CAREER & TECHNICAL  
EDUCATION

*An Assessment of Career & Technical Education in Tennessee*



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This report is based on data from the 2012-13 school year.

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## LETTER FROM THE CHAIR



**Gary Booth, Chairman**

Dear Tennesseans:

In this great State of Tennessee, preparing students and adult learners with career and technical competencies will be the engine that drives continued economic growth. Strong career and technical education (CTE) programs play an important role not only for the economy, but also in teaching students valuable skills and life lessons. Over the past two years, it has been our pleasure to see how great programs are improving students' lives and employment opportunities. The 2014 Biennial Report on Career and Technical Education features notable successes (there are many) and identifies specific challenges that must be addressed if we are to continue this economic expansion.

While education and training has become the hot button topic across the nation and state through legislation and initiatives like The Workforce Innovation and Opportunity Act (WIOA), Tennessee Promise and the Governor's Drive to 55, it is important to recognize the role of career and technical education in meeting the State's workforce development goals. Successful outcomes will rely on strong leadership, improved funding, and ongoing involvement from businesses and labor organizations. Public/private partnerships across the state have established innovative programs and advanced learning opportunities such as on-the-job apprenticeships and dual education models of education. Collaborative partnerships such as these will need to expand rapidly to meet workforce requirements for future skilled and qualified personnel.

This report serves to provide information relevant to promoting high quality education and training opportunities to Tennessee citizens. The Tennessee Council for Career and Technical Education (TCCTE) is pleased to present this report to the governor's office, the Tennessee General Assembly, the State Board of Education, the Tennessee Board of Regents, the Tennessee Department of Education and the Tennessee Department of Labor and Workforce Development.

Sincerely,

Gary Booth, Chairman

## 2013-14 TCCTE MEMBERSHIP

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*TCCTE*

# EXECUTIVE SUMMARY

**WHILE THERE ARE MANY REASONS FOR DEMANDING HIGH-QUALITY EDUCATION FOR TENNESSEANS, THERE IS AN** economic and moral imperative for providing students with the knowledge and tools they need for personal and professional prosperity. The Tennessee Council for Career and Technical Education has identified three topics of particular importance that drive the commendations and recommendations in this report.

**WORKFORCE DEMAND.** Demand for increasingly skilled labor is clearly on the rise both in Tennessee and nationally. The skills gap is widening and a shortage of qualified workers is evident in Tennessee. To significantly improve the quality of Tennessee's workforce, there must be aligned funding, accountability measures, and data tracking that enable various state government agencies to collaborate to support the desired outcomes. Work-based learning (WBL) can be a significant implementation strategy by which inter-agency planning reaches individual students. Pathways Tennessee cultivates strong statewide and regional collaboration around shared priorities to capitalize on the educational, economic and employment strengths and opportunities of the state.

**RIGOROUS EDUCATION OPPORTUNITIES.** Rigorous learning standards that align with professional expectations will be a critical factor in best serving and preparing students. Higher standards lead to improved student achievement and Tennessee is beginning to see evidence of its more rigorous Tennessee State Standards paying off. Increasing the rigor of career and technical education standards is a significant step toward raising attainment levels for CTE students and ensuring their success after high school. More rigorous CTE courses will provide for deeper learning of technical and academic content and stronger employability skill development. Additionally, robust early postsecondary opportunities, like dual credit, will continue to provide advanced learning options resulting in smoother transitions between high school, postsecondary opportunities, and careers. For these CTE courses and early postsecondary opportunities to benefit students, adequate equipment must be provided in educational settings.

**COUNSELING FOR SUCCESS.** Students and their families need more information about growing industries in Tennessee and the education necessary to follow these career paths. Tennessee Colleges of Applied Technology and community colleges have a track record of providing access to growing Tennessee industries and successfully placing students in careers related to their skill sets. Too many students have been missing out on opportunities because they do not have adequate counseling to help them understand and access existing resources. Earlier planning assistance and increased exposure to high-skill, high-demand career options will be imperative to helping students and families understand and take advantage of their postsecondary opportunities. Students need coordinated and consistent information beginning in elementary school and robust counseling services that continue through the transition to postsecondary to truly benefit from the Tennessee Promise, a last-dollar scholarship to provide two years of tuition-free postsecondary education.



# WORKFORCE DEMAND

**WHILE THERE ARE MANY REASONS FOR DEMANDING HIGH-QUALITY EDUCATION FOR TENNESSEANS, THERE IS AN ECONOMIC AND MORAL IMPERATIVE FOR PROVIDING STUDENTS WITH THE KNOWLEDGE AND TOOLS THEY NEED FOR PERSONAL AND PROFESSIONAL PROSPERITY.**

On average, the higher a person's educational attainment, the more money he or she will make and the lower his or her chances of being unemployed. For a strong education system to serve more Tennesseans, students must be adequately prepared with the knowledge and employability skills necessary to live productive lives. Employability skills ensure personal and career success through critical technical, academic, and interpersonal skills that ultimately contribute to the health and vitality of communities. Recent research, data trends, and collaborations in Tennessee serve to highlight the critical importance of considering workforce demand in evaluating career and technical education (CTE). While the Council commends the great strides being taken by various initiatives and their collaborative efforts to fill the existing skills gaps, we see the distinct need for emphasis to be placed on CTE as a central figure in enabling the progress essential to long-term economic success.

Currently, Tennessee is 43<sup>rd</sup> in the nation for percent of working adults with a 2-year degree or higher. To meet the projected demand for a skilled workforce, Governor Haslam launched Drive to 55, an initiative to increase the percentage of the Tennessee workforce that holds a postsecondary degree or credential to 55%. The underlying need for the governor's vision is clear and CTE can play a major role in meeting the growing demand for highly skilled workforce in Tennessee. This work will take a clearly articulated, collaborative effort supported by the General Assembly, various state governmental departments, regional consortia, private sector businesses, labor organizations, rural and urban communities, chambers of commerce, and schools.

**DEMAND FOR SKILLED LABOR IS CLEARLY ON THE RISE BOTH IN TENNESSEE AND NATIONALLY.**

In February 2011, Harvard Graduate School of Education released the Pathways to Prosperity Project, a report outlining the challenges of preparing young Americans for the twenty-first century. This report highlighted national trends in which jobs requiring at least some postsecondary education have grown significantly, while opportunities for people with high school degrees or lower have shrunk dramatically. The need is not simply for more education, but for stronger employability skills among individuals in the workforce. Far too many young people are considered "deficient" in skills like communications, critical thinking, and professionalism. The Harvard research team concluded that:

*"In our view, both hard and soft skills are essential for success in this economy. The growing complaints of a skills gap from some of the nation's most prominent companies and business organizations underscore a hard reality: their growing reluctance to hire young people with just a high school degree. Meanwhile, business leaders are warning that once the recession ends, they could face shortages of qualified workers in areas ranging from non-residential construction and energy to information technology, healthcare and the STEM fields. And almost all of these jobs require at least some post-secondary education."*<sup>1</sup>

**THE SKILLS GAP AND SHORTAGE OF QUALIFIED WORKERS IS CLEARLY BEGINNING TO PLAY OUT IN TENNESSEE.** In January 2010, the unemployment

**Our goal is simple: Top-tier education for our children. Retraining for those out of work and underemployed. A healthy lifestyle. All three will make Tennessee No. 1 in the Southeast for high quality jobs.**

**- Governor Bill Haslam**

rate in Tennessee was 10.2%. Early projections in April 2014 show that this rate dropped below 6%.<sup>2</sup> According to the governor's Drive to 55 website, there are significant anticipated shortages in many high-skill careers ranging from accounting and trades to health and human services. With job growth outpacing the available qualified workforce, it is critical that all students gain both the technical and academic skills necessary to attain and keep high-skill, high-demand jobs. The employability skills gap is a major concern of business and labor organizations that are speaking out about the difficulties of finding enough talent to fill existing vacancies. In addition to technical and academic skills, the most pressing need is for the development of soft skills that play a determining role in career success. Personal and social skills like dependability, punctuality, and professional behavior and work ethics are some of the most desired skills that hiring managers struggle to find in existing talent pools.

**TO SIGNIFICANTLY IMPROVE THE QUALITY OF TENNESSEE'S WORKFORCE, THERE MUST BE ALIGNED FUNDING, ACCOUNTABILITY MEASURES, AND DATA TRACKING THAT ENABLE VARIOUS STATE GOVERNMENT AGENCIES TO COLLABORATE AND SUPPORT SHARED OUTCOMES.** Striving to increase the percentage of skilled Tennesseans with a postsecondary degree or credential to 55% of the population is undoubtedly a heavy lift. The Tennessee Department of Education (TDOE), the Tennessee Department of Labor and Workforce Development (TDLWD), the Tennessee Higher Education Commission (THEC), the Tennessee Department of Economic and Community Development (TECD), the Tennessee Board of Regents (TBR), and the University of Tennessee (UT) system all have a role to play in achieving this goal. A well-rounded plan that increases access to strong educational programs for all Tennesseans, focuses on high growth industry sectors, and improves and expands

existing programs will be critical for growing the degree and certificate-holding workforce.

Creating a strong workforce for Tennessee is already a primary focus of various Tennessee government agencies. For example, the Jobs and Economic Development Goal of the Tennessee Department of Labor and Workforce Development is to "Make TN the #1 State in the Southeast for Jobs." To accomplish this, the TDLWD has identified objectives that will clearly require multiagency collaboration. These objectives specifically mention "expanding programs of study that bring together a sequence of career-focused courses that start in high school and extend through [postsecondary]" and "increasing work-integrated learning." Notably, the TDLWD's Integrated State Plan calls for partner initiatives that will help develop skilled labor pools "which will help Tennessee's workforce compete globally."<sup>3</sup>

For collaboration between government agencies to make a real impact on individuals in the workforce, there must be improved collaborative processes and funding at the local level to impact workforce development in communities across the state. For example, although labor and workforce data directly impacts the TDOE's career and technical education course offerings, local districts and postsecondary institutions must also sufficiently use local data to

Strong WBL programs build on the foundation of academic and technical skills introduced in the classroom by collaborating with local employers to reinforce and refine the professional maturity of students and prepare them for life beyond school.

determine the best offerings and opportunities for their region. Additionally, new Skills Gap Grant funding that is planned through the Drive to 55 should be aligned with the TECD Three Star Program, Perkins Reserve Grants, and other available sources to ensure that these funding systems complement one another, and that they hold communities accountable for their outcomes.

Other collaborative strategies could include work-based learning (WBL), early postsecondary credit offerings, aligned guidance resources, seamless regional pathway development from kindergarten through jobs, and access to nationally recognized industry certifications. Until this collaboration trickles down to alter the experiences of individual students in the classroom, the outcomes of Drive to 55 cannot be fully realized.

**WORK-BASED LEARNING CAN BE A SIGNIFICANT IMPLEMENTATION STRATEGY BY WHICH COLLABORATIVE PLANNING REACHES INDIVIDUAL STUDENTS.** WBL provides experiences for students to strengthen employability skills through real-world work experience in ways that classroom instruction alone cannot. WBL may take a variety of forms such as internships, apprenticeships, cooperative education (co-op), and job shadows, but ultimately is designed to meet students where they are and build toward their future. Strong WBL programs build on the foundation of academic and technical skills introduced in the classroom by

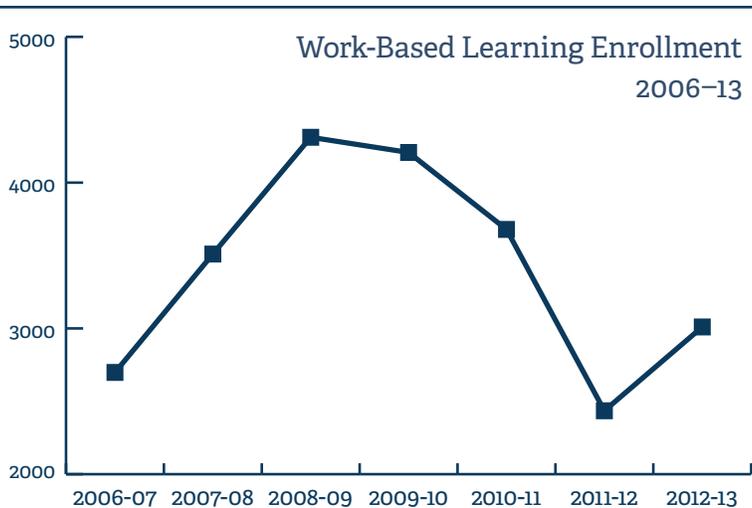
collaborating with local employers to reinforce and refine the professional maturity of students and prepare them for life beyond school. Recognizing WBL as a significant workforce development strategy for high school and postsecondary students, the Department of Labor and Workforce Development has articulated three critical goals for WBL:

1. "Increase the number and types of workplace experiences available to students of all ages and out-of-school youth,"
2. "Bring more work experiences into the classroom by engaging employers and workers,"
3. Increase collaboration between employers and classroom instructors to make classroom instruction more "relevant" to students through contextualized and applied learning opportunities that will "help students make experience-based and education choices."<sup>4</sup>

The Council agrees with the importance of expanding work-based learning to more students in and out of the classroom and commends the Division of Career and Technical Education for the significant investment it is currently making in redesigning WBL policies and resources. The Council also believes that WBL experiences fall along a continuum that may begin with career speakers or tours in middle school and increase in intensity as the student matures and progresses through high school and postsecondary. Activities like job shadows, service learning, internships, and

apprenticeships bridge the gap between high school, postsecondary, and careers.

As such, the Council recognizes that expanding work-based learning from middle school through postsecondary will require allocation of resources and expertise from the Tennessee Departments of Labor and Workforce Development, Economic and Community Development, Education, the Higher Education Commission, the Tennessee Board of Regents, the State Board of Education, the General Assembly, and Tennessee employers.



**PATHWAYS TENNESSEE CULTIVATES STRONG STATEWIDE AND REGIONAL COLLABORATION AROUND SHARED PRIORITIES TO CAPITALIZE ON THE EDUCATIONAL, ECONOMIC, AND EMPLOYMENT STRENGTHS AND OPPORTUNITIES OF THE STATE.** It is through these planning meetings that opportunities such as aligning grant funding or engaging regional businesses in determining secondary and postsecondary CTE course offerings can be identified and begin to impact the work happening in local communities.

The Division of Career and Technical Education spearheaded this effort and houses Pathways Tennessee, which convenes a robust planning team of stakeholders from the Department of Labor and Workforce Development, Economic and Community Development, the Tennessee Higher Education Commission, Tennessee Business Roundtable, and others. The true power of this opportunity lies in the fact that each stakeholder's success is reliant on the collaboration of

the group. The Department of Labor and Workforce Development's Integrated State Plan specifically articulates the need to collaborate with the Department of Education to "Create a more seamless path from high school, postsecondary education or training, to the workforce" in three main ways: 1) develop seamless paths from training to the workforce, 2) increase credentials and certificates, and 3) improve career and education guidance in high school and postsecondary.<sup>5</sup>

Aligned goals among all involved stakeholders are critical for successful planning and implementation. The Council recognizes that proper accountability measures will be crucial in ensuring that process changes move the needle on these issues in years to come. Discretionary funding opportunities and reporting will need to be aligned to make the greatest possible impact, ensure common messaging, and reward those communities that are implementing regional plans to best align their educational and workforce development opportunities with local labor data.



“The creation of seamless pathways leading from rigorous education to relevant careers in high-skill, high-demand sectors across the state will lead to a more skilled, educated, and prosperous state.”

# COMMENDATIONS

Based on the critical interplay between various stakeholders in achieving the long-term goals of Tennessee, the Tennessee Council for Career and Technical Education makes the following commendations as they relate to workforce demand:

**The Council commends the Tennessee Department of Education for (a) organizing and pursuing involvement with the Harvard consortia for Pathways to Prosperity, (b) providing leadership, funding, and planning assistance to organize and implement Pathways Tennessee, a statewide multiagency initiative to provide regional alignment of education, workforce, and community development, and (c) initiating and hosting the first Pathways to Prosperity Network State Leadership Convening.**

**RATIONALE.** In 2012, Tennessee was selected by Harvard University and Jobs for the Future as one of the six states to participate in the Pathways to Prosperity Network. As a member state, Tennessee committed to ensuring that our young people complete high school, attain a postsecondary credential with alignment in the labor market, and start on a successful career path in the state. Two regions—Upper Cumberland and Southeast—were in the planning phases during the 2012–13 school year and three additional regions plan to join the pilot program in 2014–15.<sup>6</sup>

**The Council commends the Department of Education for holding districts accountable to use local workforce data and postsecondary collaboration to shape local high school CTE course offerings and supporting this work through targeted Perkins Reserve Grant funds that support sustainable, seamless program development using the Pathways Tennessee Model.**

**RATIONALE.** In 2012–13, five Perkins Reserve Grant applications were funded for supporting regional partnerships with other Local Education Agencies (LEAs), postsecondary institutions, chambers of commerce, and industry partners and required applying districts to justify their project using local workforce data.<sup>7</sup> The 2014–15 Perkins Secondary Reserve Grant process will continue supporting these vital initiatives providing funding for LEAs that apply in focus areas such as work-based learning, teacher externships, Pathways Tennessee, innovative WBL models to serve students with Special Needs or Disabilities, and promotion of rural regional consortium. While postsecondary institutions are held responsible for using regional workforce data to justify their programs, this must be a more prominent practice for secondary CTE programs as well.

**The Council commends the State Board of Education for recognizing the importance of industry certifications in distinguishing a student and the Tennessee Department of Education for launching a Student Industry Certifications Grant Pilot Program in the 2013–14 school year.**

**RATIONALE.** According to the Tennessee state board rule which defines the minimum requirements for public schools (TN SBE Rule 0520-01-03-.06), “students may be recognized as graduating with ‘state distinction’ by attaining a B or better average and completing...a nationally recognized industry certification.” During the 2012–13 school year, the Department of Education began collecting student earned industry certifications and plans to publish a list of certifications that align with career and technical education career clusters in the fall of 2014. Also encouraging is the launch of the Department of Education’s Student Industry Certifications Grant Pilot Program, which allows students to earn nationally-recognized professional certifications at no cost, in the 2013–14 school year. Established by Public Chapter 351 of 2013, the program will be evaluated for continuation or possible increased funding as allocated by the General Assembly.

# RECOMMENDATIONS

Based on the current momentum and existing collaborations between various stakeholders in achieving the long-term goals of Tennessee, the Tennessee Council for Career and Technical Education makes the following recommendations related to workforce demand:

**The Council recommends that a greater collaborative effort be made to assist in the expansion of skill-based work-based learning opportunities through clearly aligned communication efforts, local technical assistance, and targeted tax incentives that will help communities implement and expand meaningful career development and training opportunities for all students.**

**RATIONALE.** While the Council recognizes that Tennessee state board rule (SBE Rule 0520-01-03-.06) provides the opportunity for local boards of education to offer capstone experiences to their students in the form of work-based learning, stronger collaborative efforts should be made to assist communities in designing a continuum of WBL experiences, recruiting local employers, and scaling opportunities for more students to gain valuable professional skills. According to WestEd, a nationally-recognized research institution, “To succeed in their continued educational endeavors and careers, all students should have opportunities to develop cognitively and socio-emotionally, and to obtain workplace competence and career management skills. Access to a variety of work-based learning experiences can facilitate this growth.”<sup>8</sup> Building a robust system of WBL spanning from elementary school through career opportunities will require significant resources and aligned marketing communications. Adoption of WBL as a Drive to 55 initiative would provide the awareness and opportunity to broadly improve career readiness and smooth transitions for students as they advance toward their chosen career path.

**The Council challenges the business community and LEAs in Tennessee to actively participate in co-planning WBL activities for students in all parts of the state to increase the number of students earning WBL credits by the end of the 2015–16 school year. Furthermore, the Council recommends that the Department of Education report on students earning WBL credit and their placement rate beyond high school.**

**RATIONALE.** Between the 2006–07 and 2008–09 school years, the number of students enrolled in the WBL course for credit grew from 2,698 to 4,311, comprising only 1.07% of career and technical education students at its peak. Since that time, enrollment declined to 2,435 students in 2011–12 and increased slightly to 3,010 students in 2012–13.<sup>9</sup> While breadth of enrollment in WBL is important, it is the depth of learning outcomes of these students that will help them transition from high school to postsecondary education and careers. For this reason, the Department of Education should report on the placement outcomes for students earning WBL credit. Coordinated planning and new resources and tools for teachers and employers will help schools engage with the business community to promote breadth and depth in student experiences.

**The Council recommends that the Tennessee Department of Labor and Workforce Development take a more proactive approach to promote and expand apprenticeships in light of its goals for expanding WBL across the state with support and assistance in sharing clear information with students and families from the Department of Education, the Higher Education Commission, and the Tennessee Board of Regents.**

**RATIONALE.** As workforce demand in Tennessee grows for highly skilled labor, it will be increasingly important to increase apprenticeships in high growth occupations like information technology, healthcare, and advanced manufacturing as a key strategy to align education and training opportunities with workforce demand. Nationally, 87% of apprentices are employed

after completing their programs and the average starting wage for apprenticeship graduates is over \$50,000. Employers and unions from UPS to UAW have pledged to create thousands more opportunities, but this is just the beginning. International studies suggest that “for every dollar spent on apprenticeship, employers get an average of \$1.47 in increased productivity, reduced waste and greater frontline innovation.”<sup>10</sup> This fall, the president plans to make \$100 million available in American Apprenticeship Grants, and Tennessee needs to take full advantage of this opportunity to increase the opportunities available to students. Nationally, the US would need to produce six times the number of new apprentices to offer the same number of opportunities per capita as Great Britain and sixteen times more to compare with Germany. The lack of coordinated information and messaging about apprenticeship opportunities available to Tennessee students and families is a barrier to meeting workforce demand trends.

**The Council recommends that school districts engage with stakeholders across their Economic and Community Development region every three years to ensure regional offerings align with workforce data and industry sectors of competitive advantage in Tennessee.**

**RATIONALE.** Workforce demand should be a primary driver of secondary offerings to ensure that students are adequately prepared for local postsecondary and career opportunities. While the Tennessee Colleges of Applied Technology are more agile and adjust to business needs, high schools must also adjust to ensure a seamless pipeline. The governor’s office and the Department of Economic and Community Development identified ten target sectors in which the state has a clear competitive advantage demonstrated by Tennessee’s labor market research through the Economic and Workforce Information Analysis. These growth sectors, as well as the expansion of local existing businesses, should be considered by district leadership routinely and drive high school offerings. In 2010, expansion of existing business accounted for nearly 86% of new jobs created in Tennessee.<sup>11</sup> School leadership and districts are too often unaware of these opportunities available to their students and should be able to articulate their local workforce needs and align offerings to major growth areas to aid in local talent development and retention.

**The Council recommends that statewide stakeholders pursue a targeted plan to increase the availability of rigorous, nationally-recognized industry certifications to high school and postsecondary students through (a) dedicated funding by the Tennessee General Assembly, (b) increased collaborations between Tennessee colleges and universities to offer exams as early postsecondary opportunities for high school students, and (c) the promotion, tracking, and attainment reporting of certifications of particular value in Tennessee growth sectors by Pathways Tennessee, the Tennessee Board of Regents, the Department of Education, and the Tennessee Higher Education Commission.**

**RATIONALE.** Increased funding and collaboration would result in more students attaining valuable industry-recognized certifications. For high school students, these certifications can count for postsecondary hours and training credit and aid the transition to postsecondary institutions. For all students, this will provide preparation for careers and support the goals of Drive to 55. Together, the TDOE, TBR, and THEC should endorse a list of Industry Certifications that align with high-wage, high-demand careers and state-offered CTE pathways and that count toward postsecondary credit at Tennessee institutions. While it is the responsibility of each local school board to prescribe how to award “state distinction” to students who earn industry certifications,<sup>12</sup> this list could also serve as a valuable guide for local districts in determining which certifications qualify for “state distinction.” Finally, the number of students earning these endorsed credentials should be reported and promoted as a valuable workforce development measure.

# RIGOROUS EDUCATION OPPORTUNITIES

## **RIGOROUS LEARNING STANDARDS THAT ALIGN WITH PROFESSIONAL EXPECTATIONS WILL BE A CRITICAL FACTOR IN BEST SERVING AND PREPARING STUDENTS.**

These standards will provide the rigor necessary for students to make smooth transitions to postsecondary and careers and will counteract the growing skills gap. One of the key findings of a regional Vital Signs assessment led by the Nashville Area Chamber of Commerce has now become the top priority of a task force that hopes to head off a significant worker shortage. “By the year 2021, the Nashville area will have nearly 35,000 job openings that it won’t have the skilled or credentialed workers to fill, creating an employment vacuum that could send prospective employers elsewhere to find the help they need.”<sup>13</sup> While this study refers to only one portion of the state, it is indicative of a larger trend in which graduating students will be required to have stronger skills and credentials to access the opportunities available.

## **RIGOROUS STANDARDS IN CTE CLASSES WILL POSITIVELY IMPACT THE VAST MAJORITY OF TENNESSEE STUDENTS WHO TAKE AT LEAST ONE CTE CLASS DURING HIGH SCHOOL; HOWEVER, BUILDING EMPLOYABILITY SKILLS TAKES TIME AND REPETITION TO MAKE A SIGNIFICANT IMPACT.**

During the 2012–13 school year, 182,695 high school students completed at least one CTE course for credit. Of this group, only 29,517 completed at least three CTE courses to qualify as CTE concentrators in a specific program area. Thus, only 16% of students who had taken a CTE class were considered concentrators, up from 12% the 2011–12 school year.<sup>14</sup> While it has long been touted that this small group of CTE concentrators is successful because these students graduate at a higher rate than the state average, it is important to note that these numbers cannot be directly compared. Students who drop out at any point in high school count against the high school graduation rate, while only those students who drop out after qualifying as a CTE concentrator count against

the CTE graduation rate. Students generally don’t identify as CTE concentrators until 11<sup>th</sup> or 12<sup>th</sup> grade. As one of many important indicators, it is misleading to present CTE graduation rate alone as an indicator of strong CTE programs across the state. As such, districts should promote student placement and educational attainment as more important indicators of success. The Tennessee State Standards will play an important role in reinforcing critical skills for all students both in and out of CTE classes.

Grade Level	Percent of 2012 CTE Cohort
9 <sup>th</sup>	<1.0%
10 <sup>th</sup>	7.5%
11 <sup>th</sup>	30.4%
12 <sup>th</sup>	61.7%

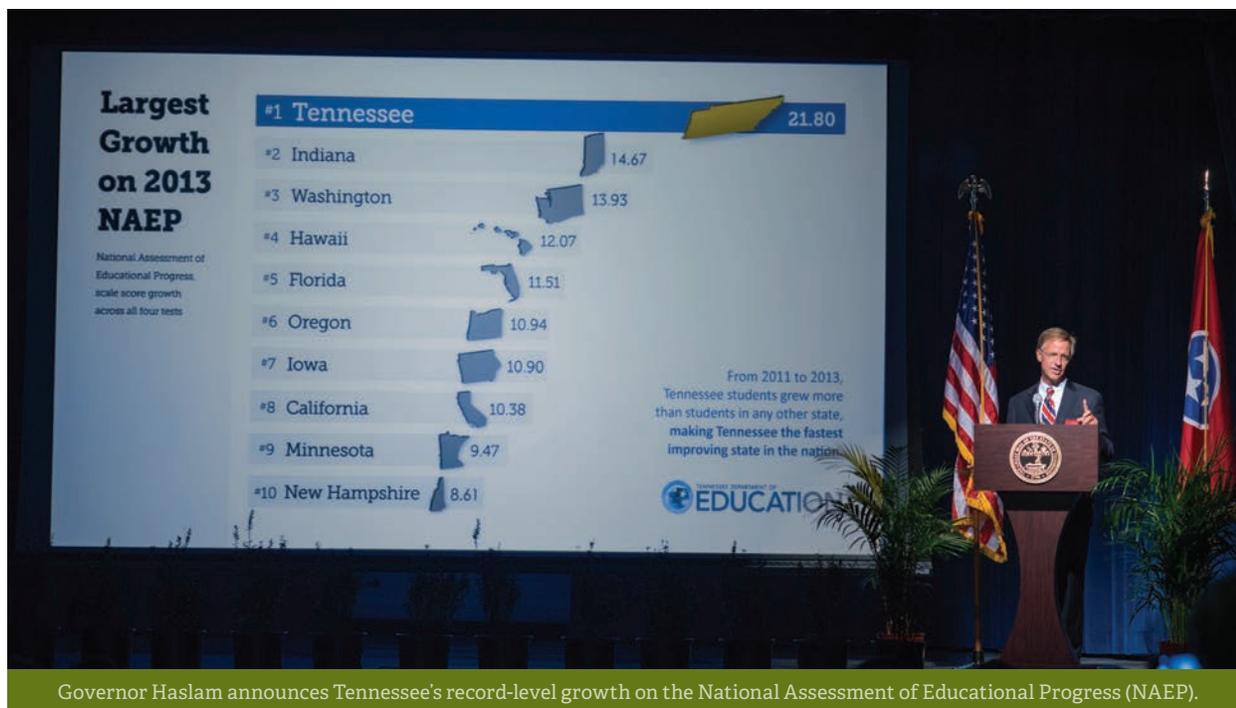
*Grade levels when students attain concentrator status*

## **HIGHER STANDARDS LEAD TO IMPROVED STUDENT ACHIEVEMENT, AND TENNESSEE IS BEGINNING TO SEE EVIDENCE OF THIS WORK PAYING OFF.**

In 2010, work began to embed the Tennessee State Standards and, in 2013, Tennessee was recognized as the fastest improving state in the nation on the National Assessment of Educational Progress (NAEP). Additionally, Tennessee set a record level of growth for any state over a two year period. It is clear that raising the bar for student achievement is paying off. While great gains are exciting, it is important to recognize that there is still a long way to go.

## **INCREASING THE RIGOR OF CAREER AND TECHNICAL EDUCATION STANDARDS WILL BE A SIGNIFICANT STEP TOWARD RAISING ATTAINMENT LEVELS FOR CTE STUDENTS AND ENSURING THEIR SUCCESS AFTER HIGH SCHOOL.**

Demographic trends comparing CTE students with the entire student population show that CTE students largely represent a good sample of Tennessee students especially in the percentages of economically disadvantaged, students with disabilities, and English language learners. Despite this population sample, the



Governor Haslam announces Tennessee's record-level growth on the National Assessment of Educational Progress (NAEP).

attainment levels of CTE concentrators highlight the critical importance of raising CTE standards across all CTE pathways to ensure postsecondary and career success. On average, fewer CTE concentrators meet ACT Math and English college-ready standards than non-CTE concentrators by a significant margin. Additionally, fewer CTE concentrators matriculate at postsecondary institutions (see Appendix E for more information). This is of particular importance considering the increasing requirements for postsecondary education in securing jobs. According to the Center on Education and the Workforce at Georgetown University, 65% of job openings across the nation will require some level of postsecondary education by 2020.

**FOR LONG-TERM SUCCESS IN TENNESSEE, STUDENTS NEED EMPLOYABILITY SKILLS THAT INCLUDE THE APPLICATION OF ACADEMIC AND TECHNICAL KNOWLEDGE AS WELL AS PERSONAL AND SOCIAL SKILLS.**

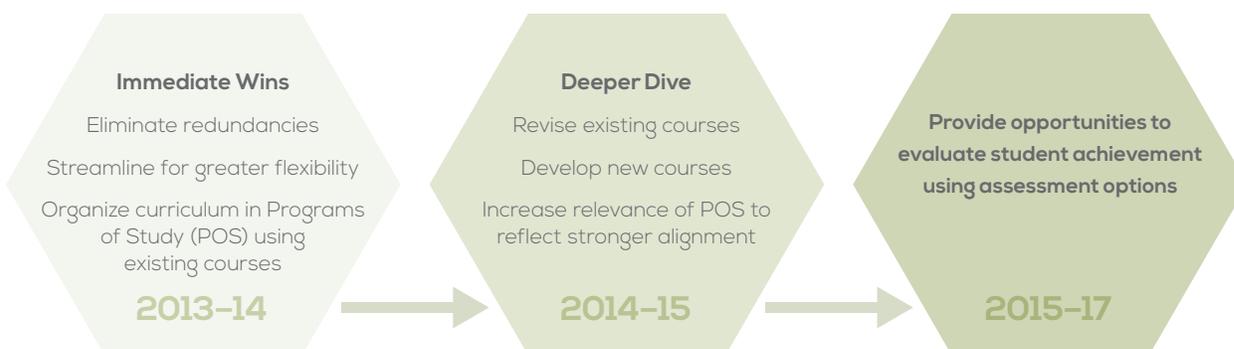
In February 2014, seventy-six Tennessee employers from across the state participated in focus groups conducted by the Department of Education to discuss the most critical employability skills for high school students. According to these employers, the application of basic academic skills and personal

and social skills were prioritized above technical knowledge and skills for hiring. By their very nature, CTE classes provide technical skills to students, but employers need assurance that there is also a strong focus on applied academics and personal and social skills for students to successfully transition to the workplace.

**MORE RIGOROUS CTE COURSES WILL PROVIDE FOR DEEPER LEARNING AND STRONGER EMPLOYABILITY SKILL DEVELOPMENT, RESULTING IN SMOOTHER TRANSITIONS BETWEEN HIGH SCHOOL, POSTSECONDARY OPPORTUNITIES, AND CAREERS.**

Improving course rigor, aligning Tennessee State Standards, and focusing on employability skills like critical thinking and teamwork will address the main skill deficiencies identified by Tennessee businesses. In 2012, the Department of Education began Phase I of a three-phase approach to CTE curriculum improvement. After transitioning from seven broad program areas of focus to the 16 nationally-recognized career clusters, Phase I began with a full review of all courses and programs of study, increased flexibility for scheduling, and improved focus on the skills and knowledge needed for specific pathway courses. The TDOE also

Phase	Percent of 2012 CTE Cohort	Implementation
Phase I	Streamline existing courses and programs of study.	2013–14 SY
Phase II	Add relevant, new courses and new programs of study. Revise courses to align to higher student expectations.	2014–15 SY
Phase III	Measure success of students with rigorous assessment options for all courses.	2015–17 SY



began forming new cluster-specific industry advisory councils, which review recommended curriculum changes to ensure greater alignment. Over the course of this early work, 139 duplicative programs of studies were identified, 100 courses were retired, and 117 courses were adopted for implementation in the 2014–15 school year. These changes reflect professional expectations for employability skills and industry trends. As a result, the new CTE course standards are:

1. Internationally competitive based on postsecondary courses and entry-level jobs in related career areas;
2. Clearly written and demanding, allowing teachers the time and flexibility to teach and explore critical topics using meaningful, project-based methodologies; and
3. Centered around skill-building exercises that foster employability skills such as critical thinking, problem-solving, and teamwork.

**EARLY POSTSECONDARY OPPORTUNITIES PROVIDE ADVANCED LEARNING OPTIONS, BRIDGE THE GAP BETWEEN HIGH SCHOOL AND POSTSECONDARY EDUCATION, AND OFTEN SAVE FAMILIES A SIGNIFICANT AMOUNT OF MONEY IN THE PROCESS.** Dual credit courses are high school courses with an associated challenge exam aligned to postsecondary standards. Students may earn postsecondary credit by passing the assessment. Dual enrollment classes are taught

at either the high school or postsecondary campus and students earn credit by passing the class. The number of dual credit students and courses has doubled over the past five years from 3,444 students and 268 courses in 2008–09 to 8,538 students and 441 courses in 2012–13. Dual enrollment has maintained the same number of students, serving 2,226 students in 298 courses, a small increase from 2008–09. During 2012–13, approximately 1,850 secondary students completed dual enrollment courses at the Tennessee Colleges of Applied Technology (TCAT). These students earned over 380,000 clock hours of training, and saved close to \$1 million in tuition and fees.<sup>15</sup> While these numbers are encouraging, the growing need for flexibility for students to earn transferable credits led the Tennessee General Assembly to create the Consortium of Cooperative Innovative Education, which is charged with increasing and expanding opportunities for high school students. The Department of Education established the Office of Postsecondary Coordination and Alignment (OPCA), which manages the Consortium as directed under Public Chapter 967. OPCA is charged with expanding and promoting early postsecondary credit opportunities for high school students. The office is also responsible for collecting and disseminating information related to postsecondary opportunities to students, parents, and educators.

In 2012, faculty work teams consisting of K-12 educators and higher education officials representing the University of Tennessee system and the Tennessee Board of Regents convened to begin development of the first three statewide dual credit courses.<sup>16</sup> The OPCA is housed in the TDOE Division of Career and Technical Education and piloted these statewide dual credit courses during the 2013–14 school year. Any high school offering College Algebra, Agriculture Business Finance, and Greenhouse Management was eligible to participate. Teachers participated in special training prior to the start of the school year where they received supplemental resources, postsecondary learning objectives, examples of best practices in the classroom, and sample questions for the culminating challenge exam. Students who met or exceeded the cut score for the course were awarded three credits upon matriculation to any Tennessee public postsecondary institution.<sup>17</sup>

**PART OF ENSURING RIGOROUS LEARNING IN CTE IS PROVIDING QUALITY, UPDATED EQUIPMENT IN EDUCATIONAL SETTINGS THROUGH ADEQUATE, RELIABLE FUNDING.** Aging

equipment is a primary concern of the Council when faced with the needs of a growing economy. For students to be truly prepared and develop valuable skills through hands-on learning and real-world projects, twenty-five to thirty-year-old equipment is unacceptable. There has been an increasing focus on aligning secondary and postsecondary programs to address this issue.<sup>18</sup> LEAs contract with TCATs to offer access to high-cost programs to high school students. This is particularly beneficial in rural communities where the prohibitive cost of maintaining programs and limited student enrollment present particular challenges for school districts. In 2013, the governor proposed and the General Assembly approved a special, one-time allocation of \$16.5 million for equipment

and technology upgrades for workforce development programs at TCATs and community colleges.<sup>19</sup> This funding is critical to ensure that quality equipment is available to secondary and postsecondary students; however, the woefully outdated equipment in many secondary CTE classrooms still presents a very real challenge. To create a sustainable pipeline and skilled workforce, equipment funding must be provided on a regular basis to train secondary and postsecondary students as well as retrain the existing adult workforce as needed.

Declining Perkins funding is insufficient to both maintain and upgrade secondary and postsecondary CTE equipment. School districts are often required

**During 2012–13, approximately 1,850 secondary students completed TCAT dual enrollment courses. These students earned over 380,000 clock hours of training, and saved close to \$1 million in tuition and fees.**

to make significant sacrifices to update expensive equipment. Often, the choice is reduced to either paying for teachers' salaries and expertise, or updating equipment. The median Perkins funding for a school district in Tennessee in 2012–13 was \$57,466 and, when considering the purchase of equipment that may cost upward of \$20,000, districts are left with difficult choices. Perkins reserve grants provided by the Department of Education provide additional dollars necessary to upgrade equipment, but it will be increasingly important for regional districts and postsecondary institutions to co-apply for funding to purchase and share equipment especially in rural Tennessee communities.

## COMMENDATIONS

Based on the need for CTE students to be adequately prepared to make smooth transitions between high school, postsecondary, and careers, the Tennessee Council for Career and Technical Education makes the following commendations as they relate to rigorous education opportunities:

**The Council commends the Tennessee Department of Education for their commitment to extensive, rigorous CTE curriculum updates that are aligned with workforce needs and embed the Tennessee State Standards.**

**RATIONALE.** In addition to increasing the rigor of CTE course standards by embedding literacy expectations and deeper conceptual understanding of both academic and technical concepts, this reform work is expected to have an impact on the student experience by providing smoother transitions between high school, postsecondary, and careers. For example, the Department has increased the number of general education course equivalencies that can count toward a student's elective focus to free up time in students schedules for more advanced studies while acknowledging the deep academic concepts that are taught contextually through CTE courses. Additionally, the Department has embedded general education and early postsecondary courses into the available CTE Programs of Study and allowed work-based learning courses to count toward a student's elective focus.

**The Council commends the Department of Education and Tennessee Board of Regents for expanding and piloting CTE dual credit opportunities that will enable more CTE students to earn early postsecondary credit.**

**RATIONALE.** During the 2013–14 school year, fifty-five high schools across the state participated in a CTE statewide dual credit course (Greenhouse Management and Agriculture Business Finance). In this first year of the pilot program, over 1,000 students participated in these courses. Several other statewide dual credit CTE courses will be phased in over the next few years, beginning with Criminal Justice in 2014–15. For the upcoming school year, a total of 111 schools will offer a CTE statewide dual credit course: 64 in Greenhouse Management; 24 in Agriculture Business Finance; 23 in Criminal Justice. The Office of Postsecondary Coordination and Alignment is also working with the Tennessee Colleges of Applied Technology and local school districts to establish dual enrollment partnerships for select CTE courses.<sup>20</sup>

## RECOMMENDATIONS

Based on the need for CTE students to be adequately prepared to make smooth transitions between high school, postsecondary, and careers, the Tennessee Council for Career and Technical Education makes the following recommendations as they relate to rigorous education opportunities:

**The Council recommends that the Tennessee General Assembly allocate annual funding for updating program equipment and offsetting the cost of professional certifications for secondary and postsecondary students through a competitive grant process that would reward secondary/postsecondary partnerships and would support local and regional workforce demand.**

**RATIONALE.** While recognizing that funding will always be an issue and that program sharing opportunities between high school and postsecondary institutions lead to improved efficiencies, Perkins funding is not sufficient to keep existing programs running while also replacing severely aging equipment. Many of the targeted growth areas for Tennessee will require existing programs to expand in order to meet the demand for skilled labor. It is not clear whether the maximum capacity for program sharing systems will be able to serve currently enrolled postsecondary students, secondary students in CTE courses, and adult retrainees to meet the needs of a robust economy. Tennessee growth areas such as Aerospace and Defense; Automotive; Chemicals, Plastics and Rubber; Energy Technology; and Healthcare and Medical Devices require expensive infrastructure. Supplementary funding should be allocated annually for this purpose by the Tennessee General Assembly. The Department of Education, Tennessee Board of Regents, Economic and Community Development, and the Department of Labor and Workforce Development should take co-responsibility for its allocation through Pathways Tennessee. The distribution of these funds could be handled through the multiagency work of Pathways Tennessee, with priority given to regional collaborative initiatives that support efficient, equipment-sharing models.

**The Council recommends that tax incentives be provided for companies that donate quality equipment, provide access to capstone work-based learning experiences, or fund professional certifications for students in areas of competitive advantage in the state of Tennessee and thereby contribute to the effective training of their future workforce.**

**RATIONALE.** Tax incentives could help companies offset the liability concerns of working alongside high school and postsecondary students. Many European education models heavily rely upon the involvement of the business community to adequately train the future workforce. For Tennessee to continue to grow and offer high-level training to more students, businesses will need to take an active role and be adequately supported and protected for their involvement. Tax incentives would incentivize this participation and promote good learning experiences for secondary and postsecondary students.

**The Council recommends that accountability systems be adopted to ensure that local pipeline development is sufficient to meet the future demand of regional labor market pools by (a) the TDOE and TBR requiring regional collaborative planning for secondary and postsecondary CTE programs based on TECD regions and their commuting patterns and that (b) regional planning assistance be supported by Local Workforce Investment Areas (LWIAs) in assessing CTE secondary and postsecondary enrollment numbers in comparison with regional workforce projections.**

**RATIONALE.** It is important to ensure that LEAs align CTE programming with postsecondary programs that are within reasonable proximity and have articulation agreements in place for early postsecondary credit. It is not enough to simply consider workforce information during this planning process; targeted coaching with assistance from LWIAs will ensure that regional consortia interpret, implement, and use the data appropriately. School districts and postsecondary institutions tend to think geographically too narrowly about the workforce pool and need assistance to use the workforce data they have to impact systemic change. In practice, school districts tend to focus on one city or county, TCATs and Community Colleges align with a few counties, and employers and workforce development agencies look at larger multi-county regions and commuting patterns. These mindsets must align to truly facilitate regional pathway development and improve articulation agreements and early postsecondary opportunities for students.

# COUNSELING FOR SUCCESS

**STUDENTS AND THEIR FAMILIES NEED MORE INFORMATION ABOUT GROWING INDUSTRIES IN TENNESSEE AND THE EDUCATION NECESSARY TO FOLLOW AVAILABLE CAREER PATHS.** Students and parents are primarily unaware of careers in growing industries like automotive supply chain manufacturing. Additionally, there is a prominent misconception of the nature of these jobs as “dirty” or “not for smart, college bound kids.” In reality, many of these require postsecondary education, are technology-based jobs, and can provide a very good income and lifestyle for employees. There is a significant disconnect that hinders student access to these career paths and the aligned postsecondary programs. Targeted invitations to visit and tour operations would go a long way to connect employers with regional counselors, principals, and postsecondary institutions to increase pipeline awareness. Postsecondary institutions can also help share this message with parents and students of regionally located high schools. There are a great number of high-skill, high-demand careers available to students who pursue an Associate’s Degree or other technical certificate through one of the Board of Regents’ Community Colleges and TCATs.

**TENNESSEE COLLEGES OF APPLIED TECHNOLOGY AND COMMUNITY COLLEGES HAVE A GREAT TRACK RECORD OF PROVIDING ACCESS TO GROWING TENNESSEE INDUSTRIES AND SUCCESSFULLY PLACING STUDENTS IN CAREERS RELATED TO THEIR SKILL SETS.** Across Tennessee, completion rates are low for students who attend four-year programs in TBR or UT universities. In looking at the 6-year graduation rate for the students who started in 2006, only 47.7% graduated from TBR Universities and 64.2% graduated from UT universities by 2012. Many of the students who do not finish may be better served by a two-year or technical program. TCATs boast a 78% completion rate and assist 81.5% of completers in securing career placements.<sup>21</sup> Students need a better understanding of the range of postsecondary opportunities available to them so they can make a good decision for their future and have a better chance of completing their degree or credential.

**TOO MANY STUDENTS HAVE BEEN MISSING OUT ON FUNDING ASSISTANCE BECAUSE THEY DO NOT HAVE ADEQUATE COUNSELING TO HELP THEM UNDERSTAND AND ACCESS EXISTING RESOURCES.** Despite the successful completion and placement rates of Tennessee Colleges of Applied Technology and the increasing distribution of lottery funds, the number of students who received lottery assistance to attend a TCAT decreased in recent years. This is largely due to the fact that many students had to choose between the HOPE scholarship and the Wilder-Naifeh Technical Skills Grant before finding the institution that would work best for them. There were 1,035 TCAT students in 2011–12 and 1,187 in 2012–13 who did not receive Wilder-Naifeh dollars due to being prior HOPE recipients and transferring from a four-year institution after the start of the school year. Had these students started at a TCAT, they would not have forfeited a combined \$2.07 million in 2011–12 and \$2.4 million in 2012–13 to assist with their education.<sup>22</sup>

**Six Year/150% of Time Graduation Rates for Fall Cohorts**

Institution	2004–10	2005–11	2006–12
TBR Community College	25.2%	26.0%	26.7%
TBR University	45.6%	46.6%	47.7%
UT University	60.1%	62.9%	64.2%

**TN Colleges of Applied Technology**

	2011–12	2012–13
Enrollment	10,063	9,135
# Completed	7,849	7,371
<b>Percent Completed on Time</b>	<b>78%</b>	<b>81%</b>
# of Completers Available for Placement	7,245	6,640
# of Completers Placed in Field of Training	5,906	5,658
<b>Percent of Completers Placed</b>	<b>81.5%</b>	<b>85%</b>

TENNESSEE EDUCATION LOTTERY SCHOLARSHIP PROGRAM						
Programs	2009–10 Actual Recipients		2010–11 Actual Recipients		2011–12 Actual Recipients	
	Students	Dollars	Students	Dollars	Students	Dollars
Independent/Four-Year	14,548	\$54,731,931	15,072	\$56,904,493	15,251	\$59,378,854
Independent/Two-Year	15	\$48,750	8	\$31,250	13	\$63,000
Private School/Business Trade School	181	\$709,620	507	\$1,832,363	662	\$1,854,262
University of Tennessee System	20,179	\$78,935,265	21,077	\$82,846,231	21,283	\$87,805,293
Board of Regents/Four-Year	26,296	\$104,232,750	27,889	\$110,358,895	28,767	\$117,292,578
Community Colleges	21,842	\$28,664,201	23,747	\$30,295,865	25,210	\$33,104,344
Colleges of Applied Technology	15,108	\$16,543,048	14,424	\$15,320,577	12,734	\$13,483,583
ALL PROGRAMS	98,079	\$283,865,565	101,569	\$297,589,674	102,803	\$312,981,914

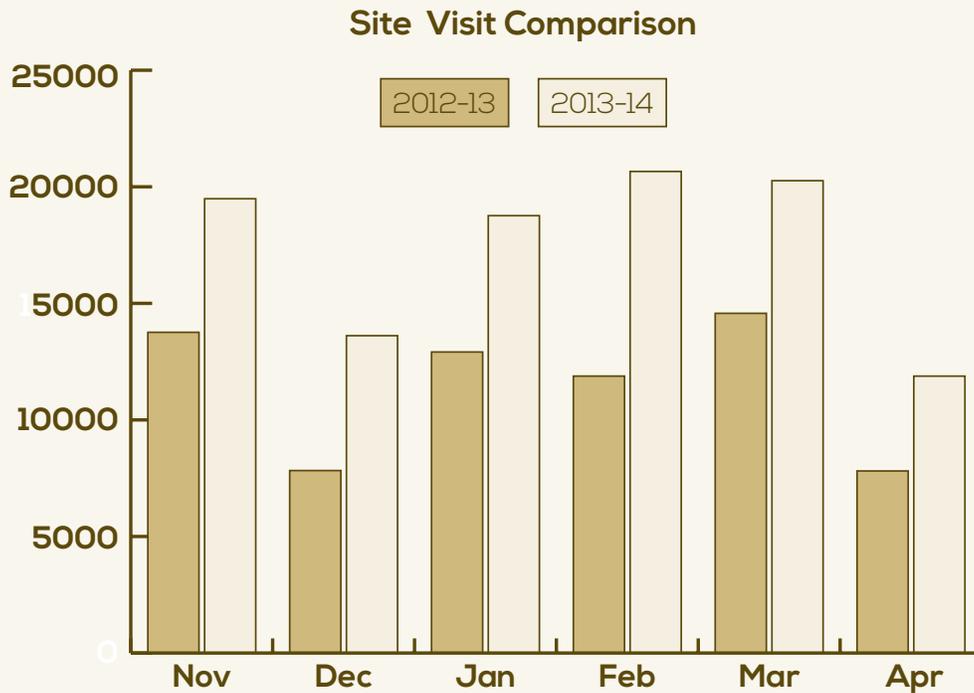
**STUDENTS NEED PLANNING ASSISTANCE EARLIER AND INCREASED EXPOSURE TO HIGH-SKILL, HIGH-DEMAND CAREER OPTIONS TO UNDERSTAND AND TAKE ADVANTAGE OF THEIR POSTSECONDARY OPPORTUNITIES.**

The advent of Tennessee Promise makes it even more important for students to understand available career paths. Students will now have access to two years of postsecondary education at a TCAT or Community College free of tuition, yet making a smooth transition into postsecondary education is not a given for these students. Neither is there assurance that this increased access will result in students selecting those fields where Tennessee businesses have the greatest need for skilled labor. Aligning supply and demand will require that the students understand (a) how their own skills and interests align with growing Tennessee industries and (b) how these certificates and degrees align with career paths that can lead to long-term personal prosperity. The role of the counselor is central to this issue and must become a higher priority for the state.

**SOME EXCELLENT TOOLS AND RESOURCES EXIST FOR COUNSELORS IF THEY KNOW HOW TO ACCESS THEM AND USE THEM TO THEIR FULL POTENTIAL BY WORKING WITH STUDENTS CONSISTENTLY OVER MULTIPLE YEARS.**

In the past two years, the Tennessee Higher Education Commission reinvigorated CollegeforTN.org, a public web portal offering career, high school, and financial aid resources for students and their families. The site is customized to meet the needs of CTE directors, teachers, and counselors and can be integrated into classroom activities to help students make a plan of study for high school and beyond, create and manage an online portfolio, and create and update a resume.

The Tennessee Higher Education Commission continues to provide outreach and training opportunities for teachers and counselors using this site, and their work is producing good results. Over 44,977 new student accounts were created between April 16, 2013 and April 15, 2014. As of April 15, 2014, over 431,872 student and 3,615 educator accounts exist on CollegeforTN.org. Despite these increases, users of the website overwhelmingly claim that career interest assessments are the most useful feature, with 80% of Counselors responding in kind on a survey conducted at the beginning of 2014. Page views also show that surveys are most prominently accessed, yet there is far greater functionality than is currently being accessed. Through thoughtful integration, this resource could serve far more students in deeper capacities than is currently



occurring and follow a student throughout their high school experience as they develop and maintain valuable portfolios to demonstrate their technical and academic employability skills.

**STUDENTS AND THEIR FAMILIES NEED COORDINATED AND CONSISTENT INFORMATION BEGINNING IN ELEMENTARY SCHOOL AND ONGOING, ROBUST COUNSELING SERVICES THROUGH THE TRANSITION TO POSTSECONDARY TO TRULY BENEFIT FROM TENNESSEE PROMISE.** A more intentional and coordinated message driven by the Department of Education and supported by Tennessee Higher Education Commission and Tennessee Board of Regents would foster earlier career awareness and help students identify opportunities

to explore careers of interest. Counselors in middle school and high school need a strong support system like this to support the development of a student's plan of study, yet there is currently no dedicated position within the Department of Education responsible for crafting and driving this message. Ultimately, it is scheduling and the student's high school plan of study that determine whether he/she can take advantage of capstone work-based learning and early postsecondary opportunities that bridge the gap between secondary and postsecondary education. Counselors are dedicated to providing the best possible assistance but need a better support structure to help families make informed decisions.



## COMMENDATIONS

Based on the need for students and families to have better information about workforce trends and high-quality secondary and postsecondary CTE programs, the Tennessee Council for Career and Technical Education makes the following commendations as they relate to counseling for success:

**The Council commends Governor Haslam and the Tennessee General Assembly for introducing and approving Tennessee Promise, the first free K-14 education initiative in the country.**

**RATIONALE.** Tennessee Promise is an opportunity for all graduating high school seniors—regardless of socioeconomic status or academic performance—to obtain a TCAT certificate, diploma, or Associate’s Degree free of tuition and fees. Tennessee Promise will provide students with a last-dollar scholarship, which means it will bridge the funding gap for a student after all other financial aid is applied. An additional 494,000 degrees are needed for Tennessee to reach the goals of Drive to 55. The program is estimated to cost \$34 million annually and will be sustained through an endowment established by the General Assembly and excess lottery dollars.<sup>23</sup> Students can use Tennessee Promise at any of Tennessee’s 27 TCATs, 13 community colleges, or any HOPE eligible independent or public four-year university offering an Associate’s Degree or certificate.

**The Council commends the TBR Office of Academic Affairs for developing Tennessee Transfer Pathways, an initiative that is helping students work toward completion of an Associate’s Degree that will transfer and count toward completion of a bachelor’s degree at any TBR or UT school or participating institution within the Tennessee Independent Colleges and Universities Association (TICUA).**

**RATIONALE.** In the fall of 2011, the TBR Office of Academic Affairs (OAA) developed Tennessee Transfer Pathways, an initiative that assures students of the transfer of credits from the list of approved programs of study to any public community college or public university. These pathways allow students to complete associates degrees and transfer to bachelor’s degree programs without loss of credits. “TCAT diploma graduates receive 30 hours of credit at any TBR Community College, and course-for-course articulation agreements exist for specific training programs.”<sup>24</sup> Tennessee Transfer Pathways constitute an agreement between community colleges and four-year colleges and universities confirming that community college courses meet major preparation requirements for further education.

# RECOMMENDATIONS

Based on the need for students and families to have better information about workforce trends and high-quality secondary and postsecondary CTE programs, the Tennessee Council for Career and Technical Education makes the following recommendations as they relate to counseling for success:

**The Council recommends that the TDOE dedicate full-time personnel to oversee counseling services that will be responsible for coordinating and delivering information and professional development that address such topics as: work-based learning opportunities, CTE curriculum updates, the sixteen CTE career clusters, postsecondary and career options, available online tools, and regional workforce trends.**

**RATIONALE.** Regional workforce data, hiring trends, and information about necessary employability skills need to be readily accessible and openly discussed for students and families to best understand their options. Counselors play a critical and central role in determining a student's schedule and coordinating a plan of study, which carries implications far beyond graduation. These critical figures must be well versed in locally offered CTE Pathways and the range of opportunities for all students to continue their education beyond high school. Too often, "smart" students are encouraged not to pursue CTE pathways in favor of more traditional academic paths, which may not be in the student's best interest. Counselors must be included in regional workforce conversations, be able to advise students in opportunities afforded by the Tennessee Promise, and have the opportunity to hear from local employers to best meet the needs of all students. A dedicated position within the Department of Education could align and coordinate this valuable information and foster collaboration with LWIAs and regional employers to help counselors understand the larger forces and how they impact students and families.

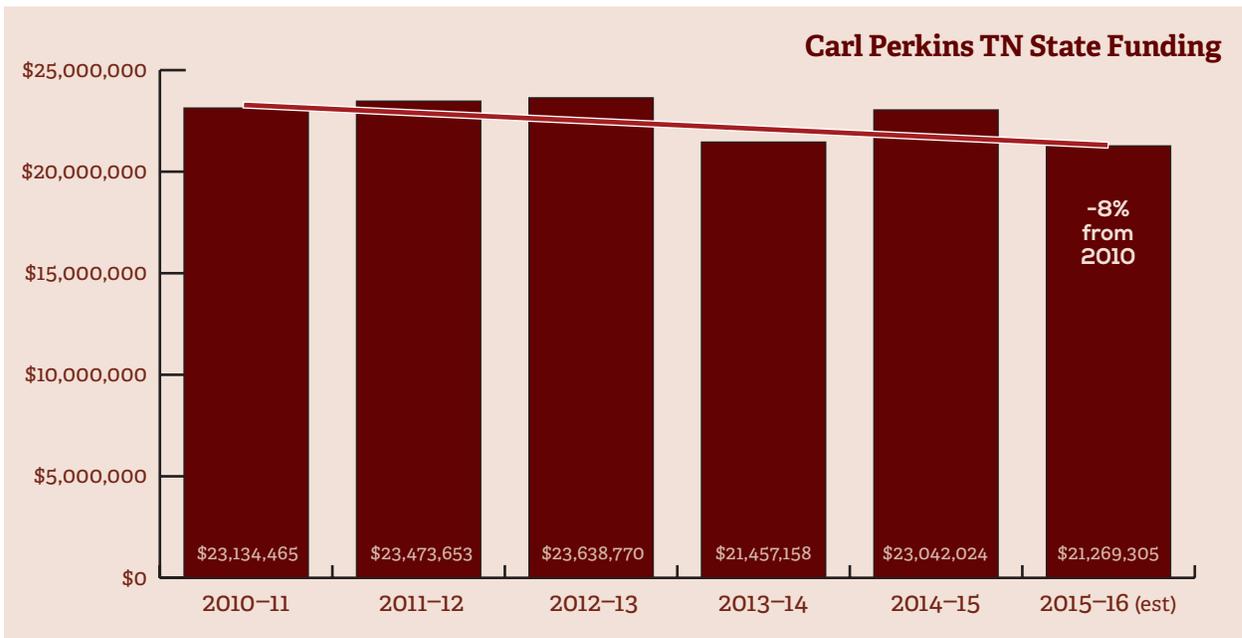
**The Council recommends that the Department of Education collect and report on longitudinal data that evaluates how concentrators move through postsecondary education and into placements that are aligned with high-skill, high-demand careers in areas of competitive advantage in Tennessee. Furthermore, the Department of Labor and Workforce Development should compare current CTE secondary and postsecondary enrollment in these pipelines with projected job growth to identify and report on anticipated gaps in the Tennessee labor pool by region.**

**RATIONALE.** Across the state, LEAs need to consider career readiness as equally important to high school graduation. In order to make informed decisions about local high school offerings, districts need to understand the opportunities for their students within the region. Over time, this information will allow the TDOE, the TDLWD, THEC, TBR and the UT system to adjust more quickly to workforce trends and share timely data that will support local decision-making in the best interest of Tennessee students.

# APPENDIX A

## Perkins Funding in Tennessee

The Carl D. Perkins Career and Technical Education Improvement Act was passed in 2006 and extended through 2012. Under the Perkins Act, federal funds are made available to help states provide technical education programs and services to youth and adults. Since 2012, Perkins funding has been annually continued, but not reevaluated. Unlike the Workforce Innovation and Opportunity Act (WIOA), which was updated and reauthorized in 2014 to serve workforce development needs, Perkins funding and program requirements remain as they were in 2006.



While statewide federal funding provides Tennessee around \$23 million dollars each year, it is important to consider the way these changes impact individual school districts. In 2009-10, the median allocation for a school district in Tennessee was \$61,499 dollars to provide career and technical education to students and update equipment as needed. In 2014-15, the median allocation will be \$53,644, 13% lower than in 2009-10. Year over year, cuts and fluctuations limit a district's ability to purchase and maintain equipment at or near industry standards or plan ahead for equipment upgrades. TCATs also receive approximately \$50,000 each year in basic Perkins funding.

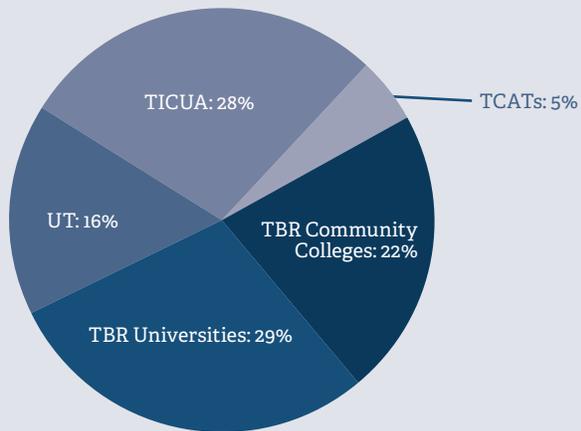
### Median District Allocation for Grant Years 2010-15

Grant Year	Median TN District Allocation
2009-10	\$61,499
2010-11	\$59,977
2011-12	\$56,758
2012-13	\$57,466
2013-14	\$58,446
<b>2014-15</b>	<b>\$53,644</b>

# APPENDIX B

## CTE Postsecondary Program Enrollment & Demographics

**Full-Time Equivalent by Sector**



### Postsecondary Full-Time Equivalent (FTE) Enrollment in Tennessee

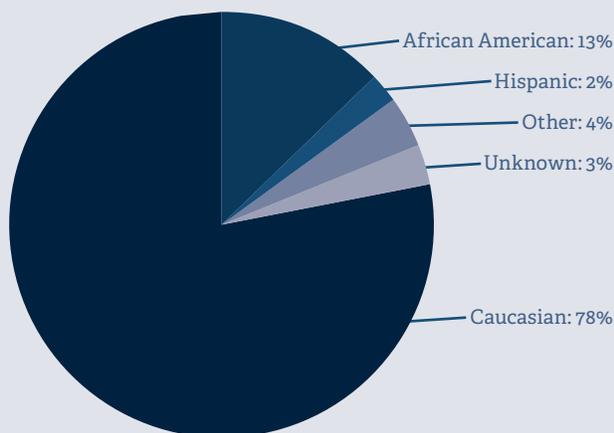
**TICUA:** Tennessee Independent Colleges and Universities Association

**TBR:** Tennessee Board of Regents

**UT:** University of Tennessee System

**TCATs:** Tennessee Colleges of Applied Technology

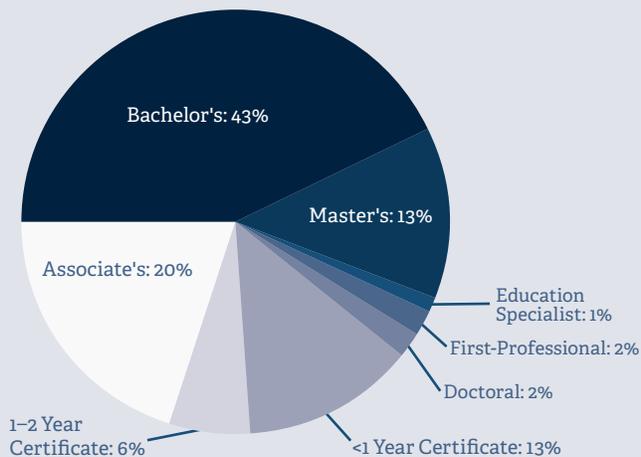
**Awards Conferred by Race**



### Postsecondary Awards Conferred in 2011-12 by Tennessee Institutions by Race

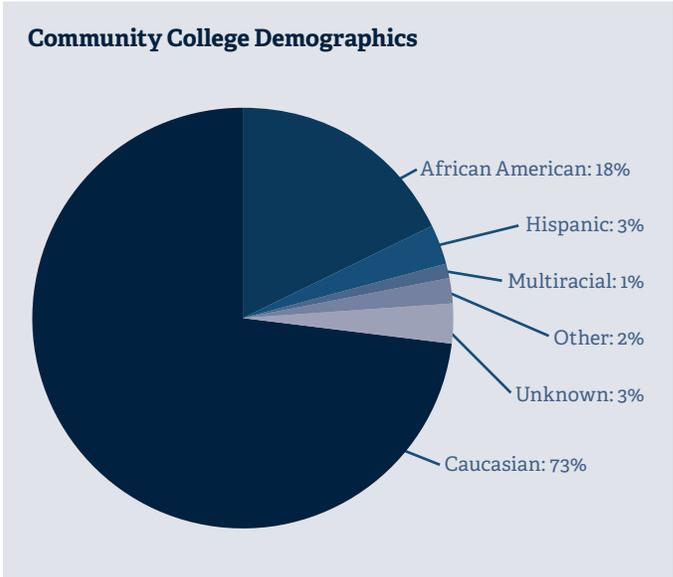
In total, 46,265 awards were conferred in the state of Tennessee in the 2011-12 school year. In this graph, "other" consists of Alaskan Native, American Indian, Asian or Pacific Islander, and multiracial.

**Awards by Award Level**



### Postsecondary Awards Conferred in 2011-12 by Tennessee Institutions by Level

In total, 46,265 awards were conferred in the state of Tennessee in the 2011-2012 school year. Only, 234 Post-Bachelor's Certificates were issued which constitutes half of one percent of total awards and, therefore, do not show up on this chart.



### Community College Snapshot

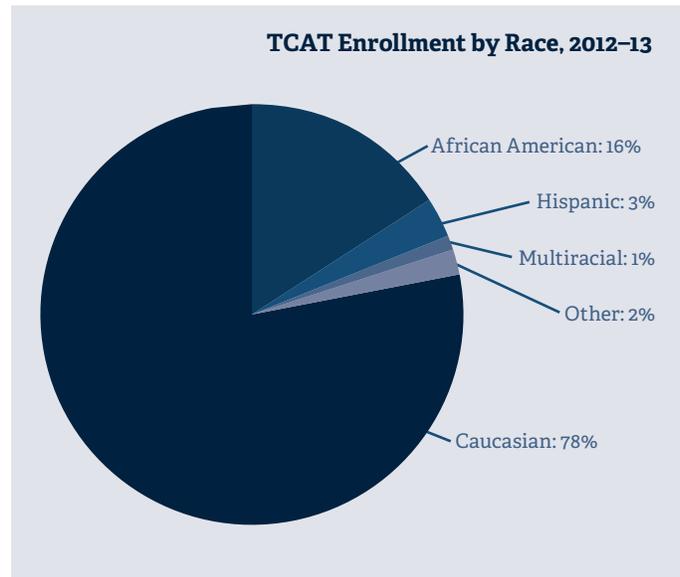
2012–13 Higher Education Fact Book

At the beginning of the 2012–13 school year, Community Colleges were serving 58,656 full-time equivalent students. This comprised 63.2% of total headcount enrollment at the start of the school year. Of those enrolled, 17,246 were first-time freshmen and 15,406 awards were conferred at the end of the year. Total full-time enrollment for community colleges hit a peak in 2010 at 62,973 and declined slowly over the next two years. The awards conferred for the 2011–12 school year were primarily in Liberal Arts & Sciences with over half of students participating in these areas (54.6%). Health professions comprised the second highest field of study during that year at 19.8% and the third most-popular was Business Management at only 6.7%.

### Tennessee Colleges of Applied Technology Snapshot

2012–13 Higher Education Fact Book

For the 2011–12 school year, the Tennessee Colleges of Applied Technology served 31,366 total students and 11,466 were full-time equivalent students. FTE students comprised 36.6% of students served. TCAT Chattanooga was the largest, serving over 1,000 full-time students. The most popular certificates and/or diplomas across the TCAT system were in the following areas:



TCAT Awards for Top Program Areas, 2011–12	Awards	Percent of Total Awards
Practical Nursing	1,708	12%
Industrial Maintenance	1,318	10%
Industrial Training Technology	1,270	9%
Business Systems Technology	1,171	8%
Welding, Brazing, Soldering	733	5%
Nursing Assistant	669	5%
Computer Information Technology	496	4%
<b>Total Awards (All Areas)</b>	<b>13,777</b>	

## Tennessee Colleges of Applied Technology Awards

*Fall 2012 through Summer 2013*

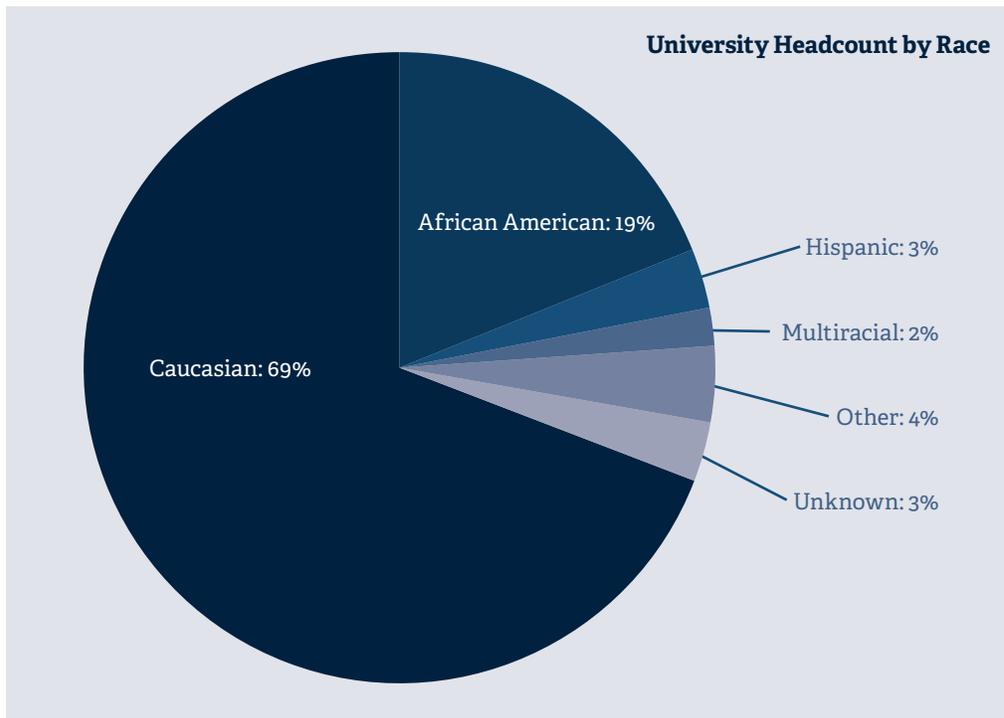
For the 2012-13 school year, the following awards were issued by the Tennessee Colleges of Applied Technology.

TCAT Awards for Fall 2012 through Summer 2013					
INSTITUTION	CERTIFICATES	DIPLOMAS	SUPPLEMENTAL CERTIFICATES	SUFFICIENT CREDENTIAL	GRAND TOTAL
Athens	38	99	141	28	<b>306</b>
Chattanooga	181	479	1	0	<b>661</b>
Covington	34	81	30	0	<b>145</b>
Crossville	39	146	131	21	<b>337</b>
Crump	35	96	1	21	<b>153</b>
Dickson	50	200	283	0	<b>533</b>
Elizabethton	202	272	11	17	<b>502</b>
Harriman	41	112	82	0	<b>235</b>
Hartsville	121	158	20	271	<b>570</b>
Hohenwald	52	156	104	2	<b>314</b>
Jacksboro	39	115	35	0	<b>189</b>
Jackson	148	242	12	0	<b>402</b>
Knoxville	51	374	568	0	<b>993</b>
Livingston	21	211	1,163	282	<b>1,677</b>
McKenzie	43	131	14	1	<b>189</b>
McMinnville	35	129	95	28	<b>287</b>
Memphis	163	425	216	0	<b>804</b>
Morristown	55	241	132	0	<b>428</b>
Murfreesboro	90	185	374	2	<b>651</b>
Nashville	220	322	88	0	<b>630</b>
Newbern	36	175	36	0	<b>247</b>
Oneida	42	88	147	0	<b>277</b>
Paris	76	207	54	3	<b>340</b>
Pulaski	153	99	805	20	<b>1,077</b>
Ripley	22	88	44	0	<b>154</b>
Shelbyville	87	221	265	0	<b>573</b>
Whiteville	38	68	50	0	<b>156</b>
<b>GRAND TOTAL</b>	<b>2,112</b>	<b>5,120</b>	<b>4,902</b>	<b>696</b>	<b>12,830</b>

## Tennessee University Snapshot

2012–13 Higher Education Fact Book

The chart below includes students at both TBR and UT system universities. For a further breakdown, reference the 2012–13 Higher Education Fact Book. At the beginning of the 2012–13 school year, Tennessee Universities were serving 119,243 full-time equivalent students. This comprised 83.3% of total headcount enrollment at the start of the school year. 64% of FTE students were enrolled at TBR Universities. Of the total student population, 19,579 were first-time freshmen, or 13.7% of the total university headcount. Overall, 18% of university students were enrolled at the graduate and professional level. Ultimately, 20,337 undergraduate awards and 8,139 graduate awards were conferred at the end of the year. Total full-time enrollment for universities hit a peak in 2010 at 120,926 and declined slowly over the next two years. The three largest fields were Business Management & Administration (16.5%), Education (12.9%), and Health Professions (12.1%). The next three major fields were Social Sciences (6.3%), Engineering (6.2%), and Psychology (5.3%).



# APPENDIX C

## CTE Secondary Program Enrollment

### 2012–13 CTE Enrollment

The following data is based on the 2012-2013 school year as released by the Tennessee Department of Education through the TDOE website. More information can be found on the Career and Technical Education Report Card at TN.gov.

#### High School Enrollment in CTE Courses, 2012–13

# Secondary Students Enrolled in a CTE Course	182,695
% of CTE Concentrators*	16.16%

#### CTE Enrollment by Program Areas

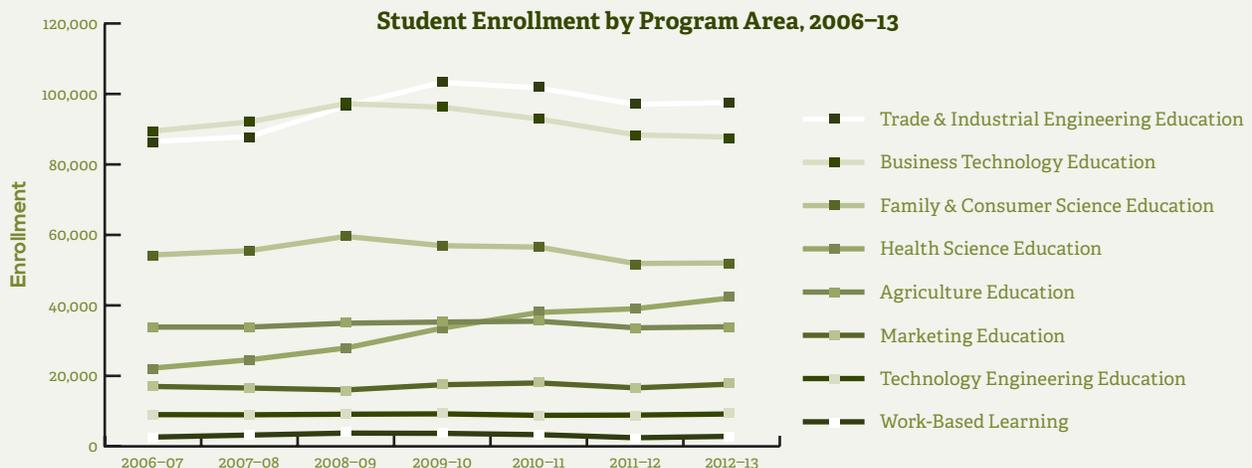
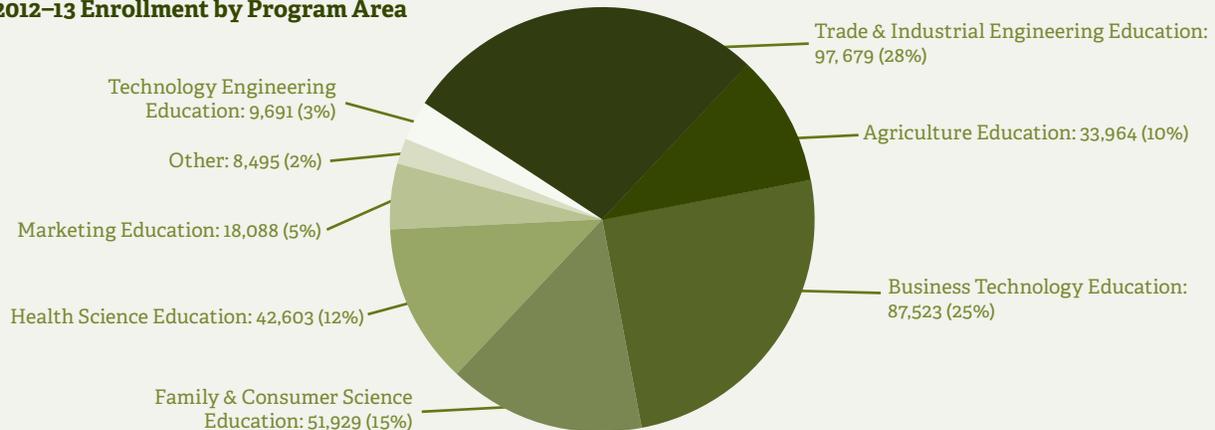
Agricultural Education	33,964	9.70%
Business Technology Education	87,523	25.01%
Family and Consumer Science Education	51,929	14.84%
Health Science Education	42,603	12.17%
Marketing Education	18,088	5.17%
Other	8,495	2.43%
Technology Engineering Education	9,691	2.77%
Trade and Industrial Education	97,679	27.91%

#### Work-Based Learning Enrollment

Year	WBL Enrollment	% of CTE Enrollment
2006–07	2,698	0.74
2007–08	3,510	0.93
2008–09	4,311	1.07
2009–10	4,207	1.06
2010–11	3,679	0.93
2011–12	2,435	0.64
2012–13	3,010	0.78

\*A CTE concentrator is a student who has completed three or more CTE courses

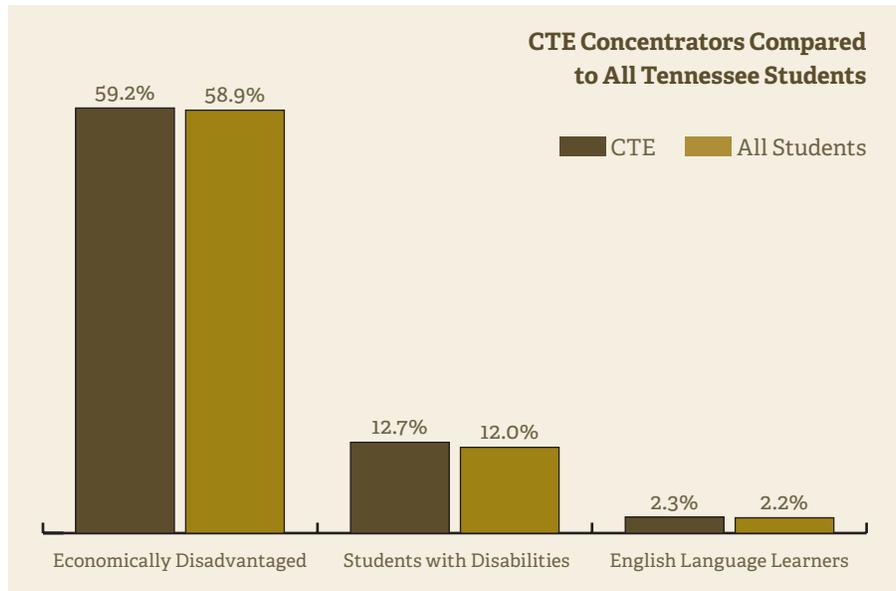
#### 2012–13 Enrollment by Program Area



# APPENDIX D

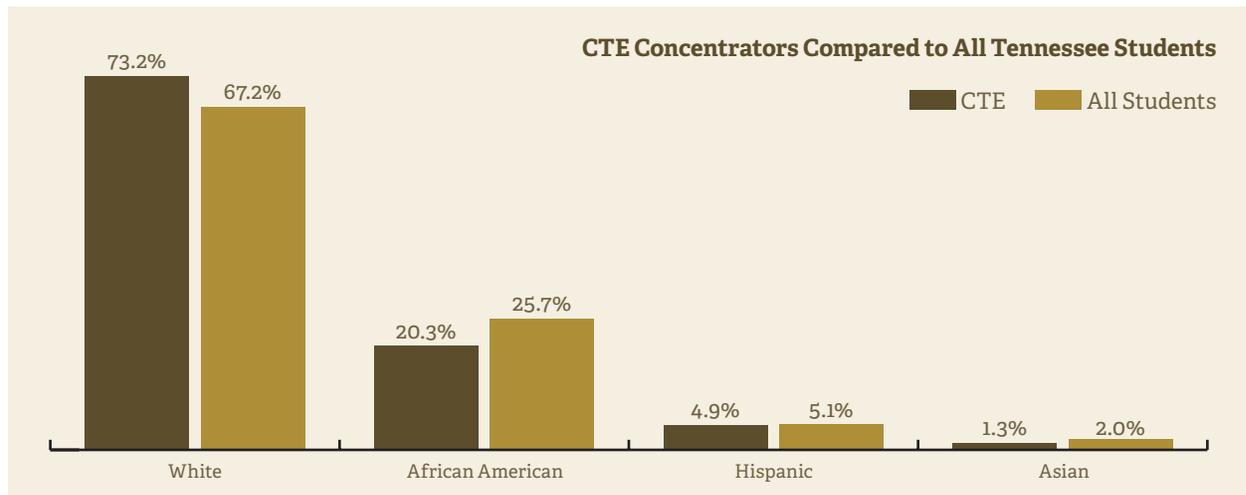
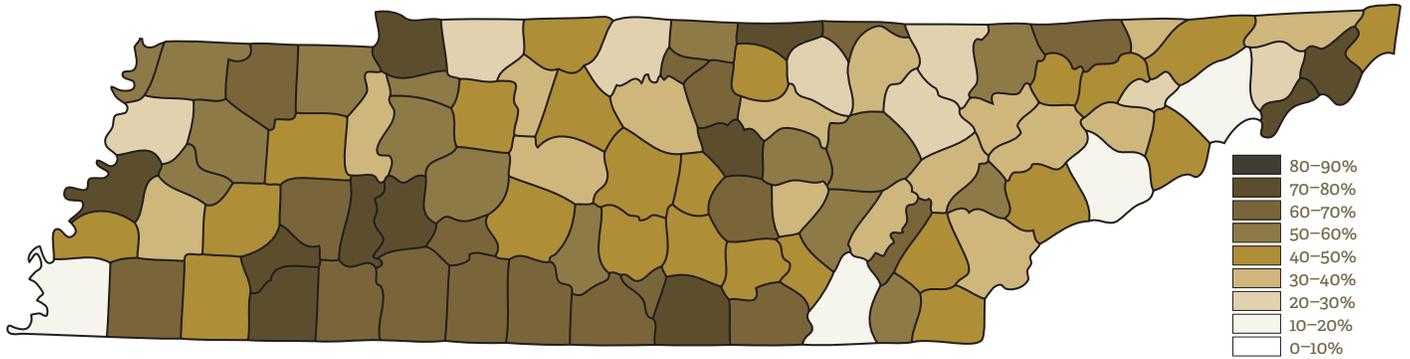
## Secondary CTE Demographics, 2012–13

While CTE concentrators are similar to other students across Tennessee, there are higher percentages of concentrators in rural areas. There are also more white students within the CTE concentrator population.



### Secondary CTE Enrollment as a Percentage of Total Enrollment by County

There are extreme differences from county to county regarding the number of students who take CTE courses. CTE Pathways are determined at the discretion of the LEA.

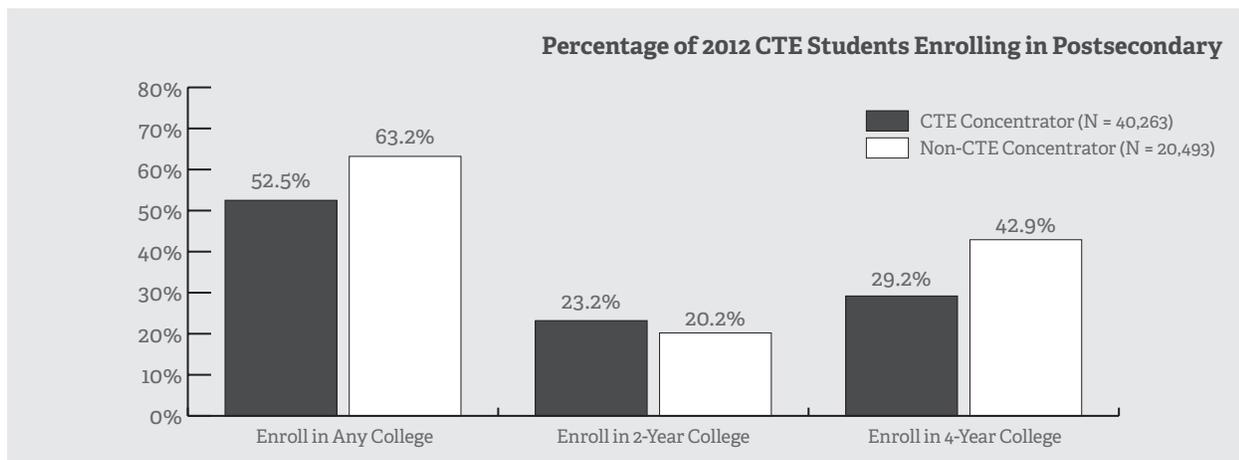
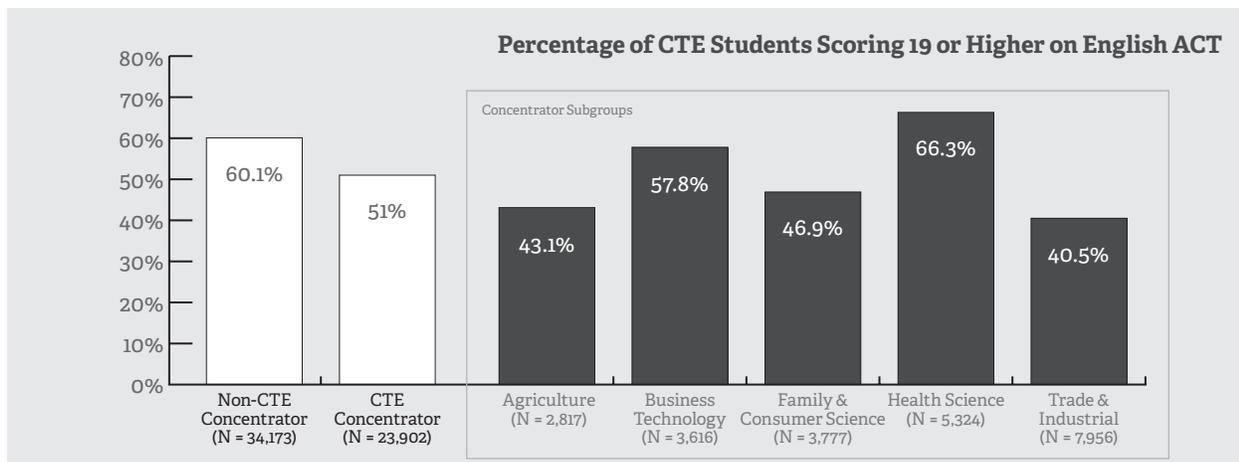
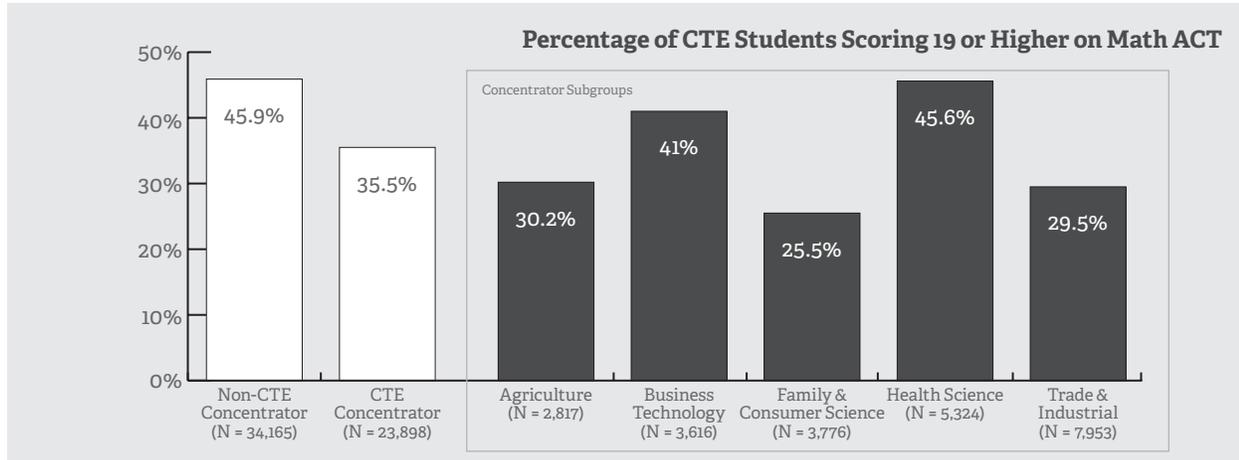


# APPENDIX E

## Secondary CTE Student Achievement, 2012–13

On average, fewer CTE concentrators meet ACT college-ready standards than non-CTE concentrators. Additionally, fewer CTE concentrators matriculate at a postsecondary institution. This is of particular importance considering the increasing requirements

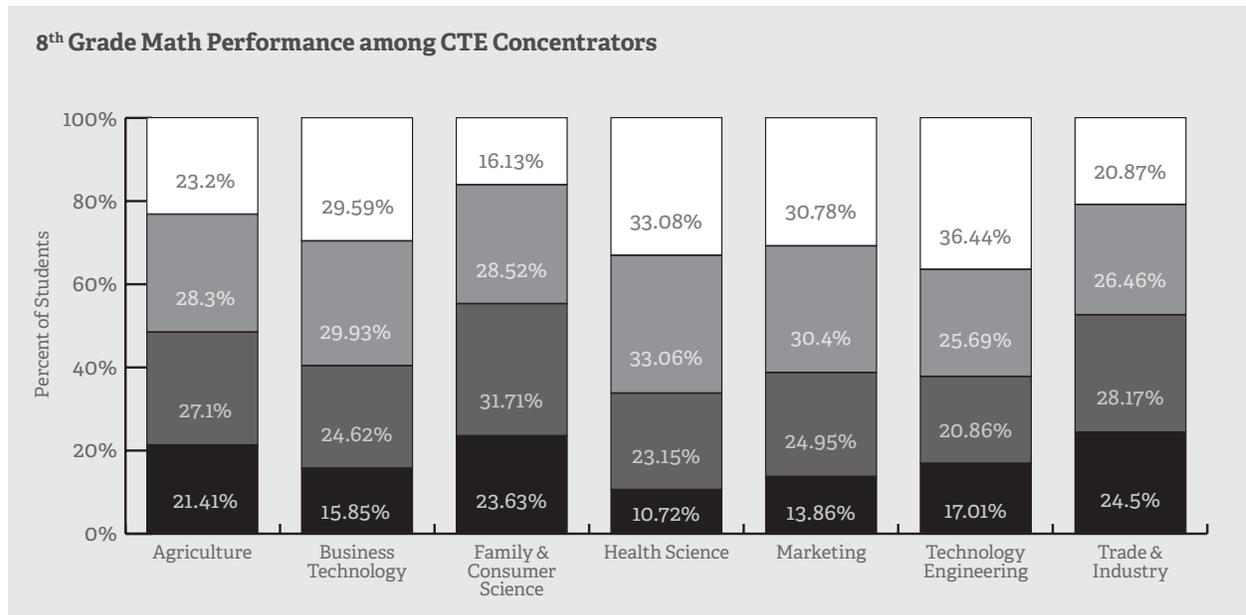
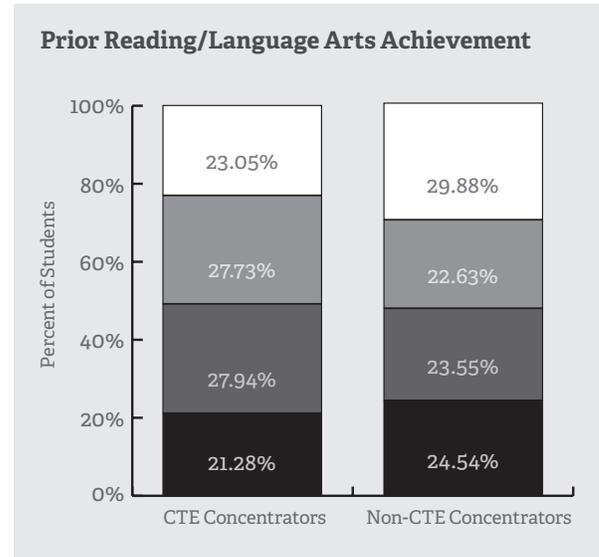
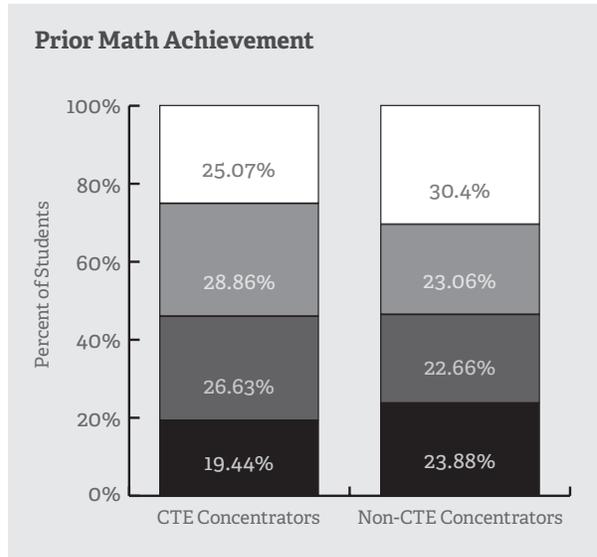
for postsecondary education in securing jobs. According to the Center on Education and the Workforce at Georgetown University, 65% of job openings will require some level of postsecondary education by 2020.



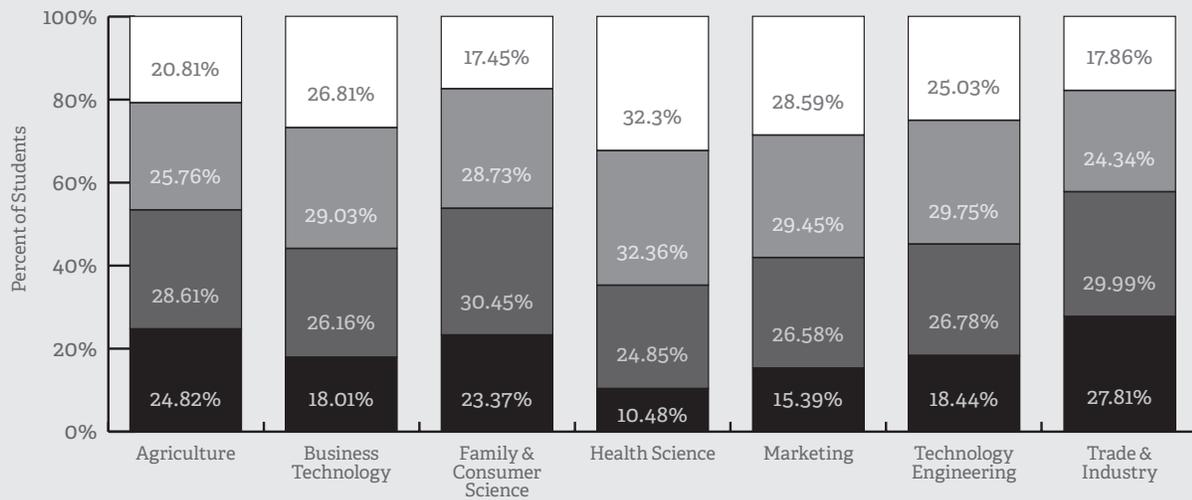
### Math and RLA Achievement Scores

While ACT scores vary between CTE concentrators and non-CTE concentrators, prior math and reading/language arts (RLA) achievement scores are similar and differences in scores appear to increase over time. This reinforces the importance of providing more rigorous CTE curriculum across all CTE areas. On 8th grade tests, there are already notable differences between CTE concentrators across program areas.

Students concentrating in Health Science and Technology Engineering scored significantly higher in 8th grade math than those concentrating in Family and Consumer Sciences or Trade and Industrial Education. Similarly, students in Health Science and Marketing outpaced their peers in Family and Consumer Sciences or Trade and Industrial Education in 8th grade reading language arts.



### 8<sup>th</sup> Grade Reading/Language Arts Performance among CTE Concentrators



Top 25%

Second Quartile

Third Quartile

Bottom 25%

### Secondary CTE Concentrator Data, 2012–13

For the 16% of students who do complete three or more CTE courses, a significant number are placed successfully. Additionally, for those concentrators who choose to enroll in Dual Credit or Dual Enrollment courses, the success rate is high.

Secondary CTE Concentrator Reading/Language Arts	
% P/A Goal for RLA	80.00%
% P/A	70.11%
Secondary CTE Concentrator Mathematics	
% P/A Goal for RLA	70.00%
% P/A	54.57%
Secondary CTE Concentrator Post-High School Placement	
% Goal of CTE Concentrators in Post-High School Placement	90.00%
% of CTE Concentrators in Post-High School Placement	91.29%
Secondary CTE Concentrator Dual Credit	
# of Dual Credit Courses	134
# of CTE Students in Dual Credit Courses	8,615
% of CTE Students in Dual Credit Courses	4.69%
% of CTE Students Enrolled and Earning Credit	98.33%
Secondary CTE Concentrator Dual Enrollment	
# of Dual Credit Courses	110
# of CTE Students in Dual Credit Courses	2,078
% of CTE Students in Dual Credit Courses	1.13%
% of CTE Students Enrolled and Earning Credit	98.88%

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