



Tennessee Colleges of Applied Technology: A Primer

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Key Points

The Drive to 55 is a statewide initiative to increase the percentage of Tennesseans with a postsecondary credential to 55 percent by 2025. The participation of all public and private higher education institutions is necessary to meet this goal and prepare individuals for increasing workforce demands. The Tennessee Colleges of Applied Technology (TCATs) are critical to this goal, especially with statewide initiatives like Tennessee Promise and Tennessee Reconnect increasing enrollment at these institutions. Approximately 2,087 students attended TCATs with Tennessee Promise this past year and an additional 3,000 adults attended TCATs through the Tennessee Reconnect program, accounting for about 25 percent of total TCAT enrollment.

TCATs are Tennessee's public colleges for technical training, providing technical skills and professional training necessary for the current job market. There are 27 TCATs spread across the state, with nine in each Grand Division, plus numerous satellite campuses. Program offerings vary by location because they are driven by the industries present in the area surrounding each TCAT location. Over 60 programs are offered across the state, including practical nursing, automotive technology, and computer information technology.

Every TCAT is closely connected with its local community, including high schools and industry. High schools are increasingly aligning career and technical education programs with those offered at the local TCAT and offering dual enrollment opportunities. Students who obtain industry certifications while in high school are able to receive credits at a TCAT for those certifications. Local industry plays a role at each TCAT location, serving on advisory committees with others to help ensure curriculum and skills being taught are current with industry practice. Additionally, local employers often use TCATs as a resource for continuing education and specialized training for their employees.

Regardless of program of study or location, TCATs have high completion rates, licensure examination pass rates, and job placement rates. These outcomes, combined with a steady increase in enrollment over the past few years, put TCATs on track to do their part in meeting the Drive to 55. Also, the passage of the Focus on College and University Success Act presents the Tennessee Board of Regents, which oversees the state's TCATs, with an opportunity to focus more attention on those institutions to help improve outcomes and meet the Drive to 55 goal.

TCATs are an Important Part of the Drive to 55 Initiative

The Drive to 55 is a statewide initiative to increase the percentage of Tennesseans with a postsecondary credential to 55 percent by 2025. The participation of all public and private higher education institutions is necessary to meet this goal and prepare individuals for increasing workforce demands. The Tennessee Colleges of Applied Technology (TCATs) are important to this goal, especially with statewide initiatives like Tennessee Promise and Reconnect (see these programs' descriptions in the shaded box) affecting enrollment at these institutions. In the 2015-16 school year, 2,087 students attended TCATs with Tennessee Promise and an additional 3,000 adults attended TCATs through the Tennessee Reconnect program.¹

TCATs are Tennessee's public colleges for technical training, providing technical skills and professional training for the current job market. There are 27 TCATs spread across the state, with nine in each Grand Division, plus numerous satellite campuses. Fall 2015 student headcount for the entire TCAT system was 19,792, while full time equivalent (FTE) enrollment was 13,992 students.² Program offerings vary by location because they are driven by the industries present in the area surrounding each TCAT location.

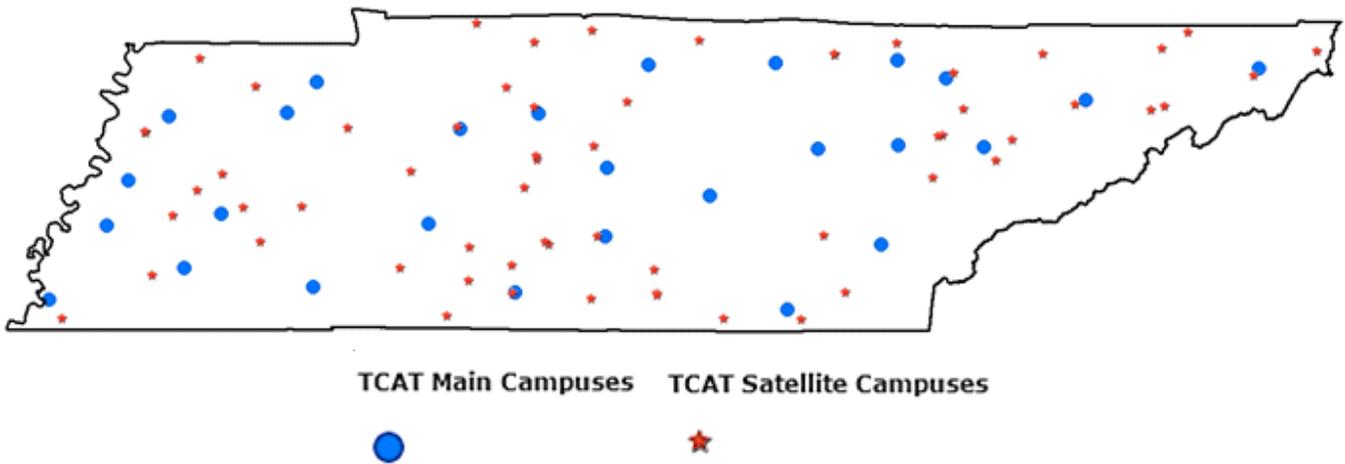
Tennessee Promise is a lottery-funded scholarship and mentoring program that provides a last-dollar scholarship for high school graduates seeking a degree or certificate at a community college, TCAT, or other eligible institution. Last-dollar means that all other available grant aid is applied (e.g., Pell grant or Wilder-Naifeh Technical Skills grant) before Promise funds are applied. The scholarship award varies for each student. Of the 2,087 Tennessee Promise students at TCATs in fall 2015, 669 receive scholarship funding from the program. The average award, excluding individuals who received no monies from this program because other aid paid their full cost of attendance, was \$530.

The ***TCAT Reconnect Grant*** is a lottery-funded grant that provides financially independent students (determined by tax-filing status) the opportunity to attend a TCAT at no cost through a last-dollar scholarship. The scholarship covers any remaining tuition and mandatory fees after other grant aid is applied. Over the 2015-16 academic year, approximately 3,000 TCAT students participated in the Reconnect program, with about half of these students receiving funding from the program.

¹ Tennessee Higher Education Commission (THEC) academic year data is used throughout the report to better compare TCATs to other higher education institutions. The Tennessee Board of Regents (TBR) reports year-end data for TCATs because of their unique academic program schedule. TBR data often differs from THEC data for this reason.

² FTE enrollment is a calculation of the number of students taking the equivalent of a full study load. It accounts for full-time, part-time, and continuing education students.

Exhibit 1: Map of TCAT Main Campuses and Satellite Locations



Source: Tennessee Board of Regents.

Focus on technical education and skills training

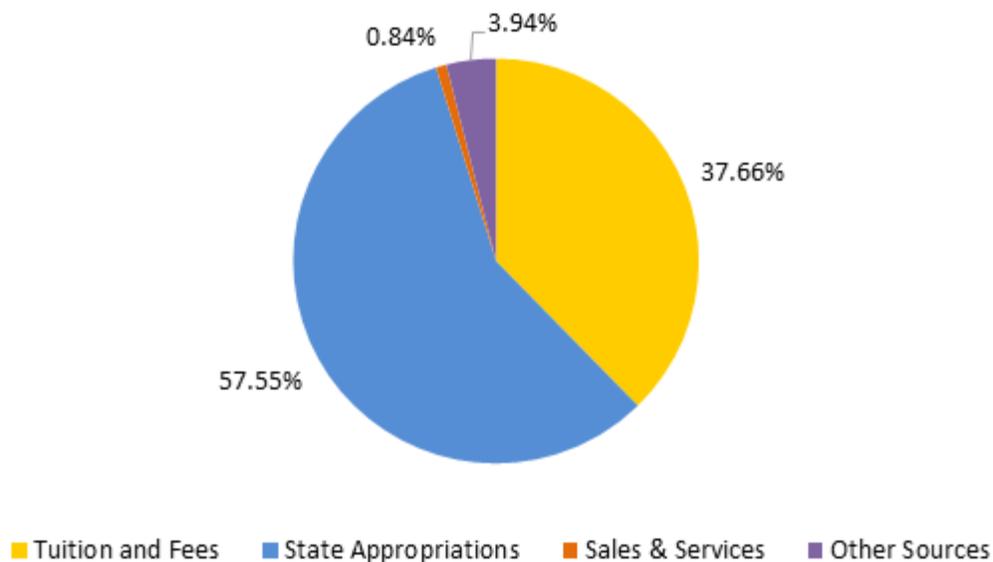
TCATs have focused on providing technical education and skills training for the workforce since their creation. In 1963, the General Assembly established a system of technical institutes and area vocational-technical schools. The State Board of Education (SBOE) governed the system until 1983, at which point control shifted to the Tennessee Board of Regents (TBR). The schools were renamed the Tennessee Technology Centers in 1994, before undergoing another name change in 2013 to become the TCATs.

TCAT central office administration consists of a Vice Chancellor and seven other staff members at TBR. Each TCAT campus generally has a director, assistant director, student services coordinator, and a few administrative personnel. The number of faculty varies at each TCAT, though each program typically has one instructor. Instructors are required to have three to five years of work experience in their field, as well as essential industry certifications.

TCATs are primarily state-funded

TCATs receive more than 50 percent of their revenues from state appropriations, with the largest remaining share coming from tuition and fees. This is different from public community colleges and four-year institutions, which rely more heavily on tuition and fee revenue sources. For fiscal year 2015-16, TCATs received \$52.4 million in state appropriations.

Exhibit 2: Unrestricted Educational and General Revenues by Source



Source: Tennessee Higher Education Commission.

Similar to other higher education institutions, the TCAT funding request is made by TBR to the Tennessee Higher Education Commission and then to the Governor and General Assembly.³ The funding request is developed using a cost and enrollment-based funding formula.

There are several components to this formula, including instruction, student services, institutional support, maintenance and operations/rent/utilities, equipment replacement, and staff benefits. The formula uses a three-year average of actual FTE. The FTE figure is calculated using all students enrolled, except dual credit students, on a pro rata basis.⁴ The formula includes base funding for each component and also accounts for the number of programs offered, additional FTE, and satellite campuses.

Some federal funding goes to TCATs

The 2006 Carl D. Perkins Career and Technical Education Improvement Act (Perkins) provides federal funds that are shared among secondary and postsecondary institutions. Tennessee received approximately \$23 million under Perkins for fiscal year 2016. Secondary schools receive the largest share of Tennessee’s Perkins funding, approximately 85 percent. TCATs and community colleges equally divide the remaining 15 percent of funds. TCATs apply for Perkins funds through the TCAT central office. These applications focus on improving existing programs or creating new ones.

³ These funds flow as a lump sum through TBR, and the Vice Chancellor of the Colleges of Applied Technology has the authority to distribute them.

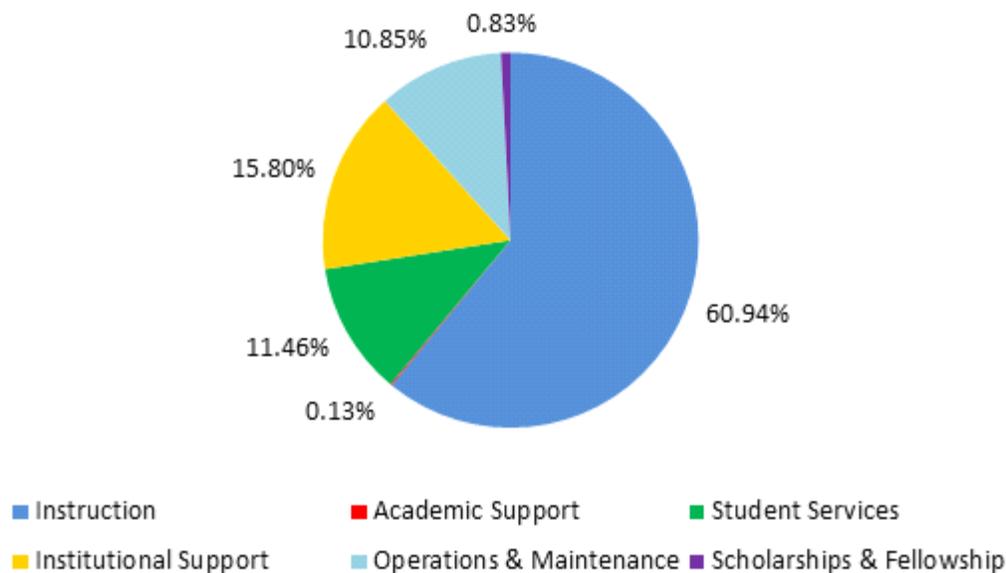
⁴ For example, a full-time student would attend 900 hours per year and a part-time student attending at half the time (450 hours) would be counted as one-half FTE. Continuing education students are also calculated on this pro rata basis – if a continuing education student takes 15 hours of classes, then they are counted only for those 15 hours of participation.

In addition, the Tennessee Department of Education (TDOE) sets aside some of the Perkins funds for Reserve Grants, which are competitive grants and can be used for equipment or industry certifications. The Perkins Act permits the state to reserve 10 percent of its Perkins funds for distribution via Reserve Grants. These funds are available by application for TCATs focused on forming partnerships between secondary and postsecondary settings.

Expenditures primarily go toward instruction

Exhibit 3 highlights the differences in expenditure categories. TCATs, in the aggregate, spend approximately 61 percent of their funds on instruction, which includes professors' salaries.

Exhibit 3: Unrestricted Educational and General Expenditures by Functional Area



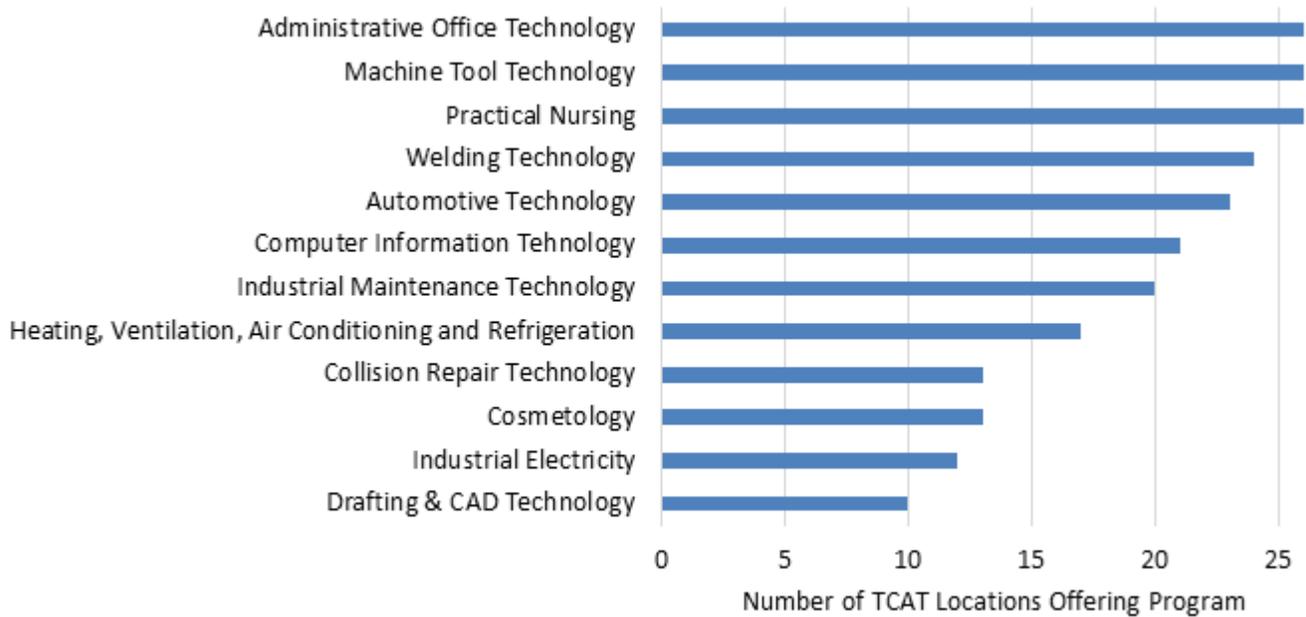
Source: Tennessee Higher Education Commission.

Program offerings are diverse

Currently, there are over 60 programs offered at the TCATs, ranging from advanced manufacturing to dental assisting.

Program offerings vary by location, as industry demand in the local area helps determine which programs exist. If a particular program experiences low enrollment or that industry leaves the area, TBR will close the program. Similarly, if an industry experiences a downturn, TBR may designate the program as inactive until the industry recovers. All TCAT programs are accredited by the Council on Occupational Education, a national accrediting agency. In order to maintain accreditation, programs must meet certain benchmarks based on outcomes: 60 percent completion rate, 70 percent job placement rate, and 70 percent licensure examination pass rate.

Exhibit 4: Most Offered Programs at TCATs



Source: Tennessee Board of Regents.

The ***Council on Occupational Education (COE)*** is the accrediting body for non-degree-granting and applied associate degree-granting higher education institutions, focusing on career and technical education. Accreditation requires that institutions meet COE-determined benchmarks for student completion, job placement, and licensure examination pass rates. All TCATs are accredited by COE.

The ***Southern Association of Colleges and Schools Commission on Colleges (SACSCOC)*** is the accrediting body for degree-granting higher education institutions. The accreditation requirements for these institutions do not include mandatory benchmarks; rather, student achievement is evaluated by looking at a compilation of indicators that each institution is able to self-select. Indicators may include, among other criteria, retention rate, graduation rate, or student portfolios. All community colleges and public universities in Tennessee are accredited by SACSCOC.

Programs are highly structured

TCAT programs for full-time students run from approximately 8:00 a.m. to 3:00 p.m., five days a week, year-round, a commitment similar to a full-time job. Most full-time programs require about 1,500 clock hours for a diploma, which typically takes 12-16 months to complete.

Most programs operate on an open entry/open exit system; new students are able to enter throughout the trimester when there are openings. This allows new students to be in the program alongside students who are in their last trimester, which is designed to foster student collaboration and resembles a real working environment, where employees with varying levels of experience work together.

TCATs award both certificates and diplomas. A certificate is awarded when a student demonstrates proficiency in a particular skill, whereas a diploma is awarded once a student is proficient in an entire course of study. Certificates are thus stackable and multiple certificates can be obtained while working toward a diploma. Although a TCAT student may complete a program with multiple certificates and a diploma, only the highest level credential awarded counts toward the Drive to 55 goal.

Exhibit 5 shows the trajectory for a student in the Pharmacy Technician program at TCAT Memphis. This program is expected to take three trimesters for a full-time student. A student can earn stackable certificates culminating in the Pharmacy Technician Diploma, meaning a student can stop at any point with a certificate that can translate to a relevant job. That certificate will count toward the Drive to 55 tally, as it represents the highest credential awarded to the student. A student who earns the two certificates and goes on to receive a diploma is counted toward the Drive to 55 tally one time because only the highest level credential awarded, the diploma, is counted. The Pharmacy Technician program culminates in an industry certification, should a student choose to take the Pharmacy Technician Certification Examination.

Exhibit 5: Certificate and Diploma Levels for the Pharmacy Technician Program



Source: TCAT Memphis Website.

TCATs are closely connected with local industry

Every TCAT program has an Advisory Committee that is made up of employers, industry professionals, or alumni who ensure curriculum and skills taught are current with industry practice. The employers represented on the committees are also important to job placement. At TCAT Nashville, dental lab owners, many of whom have hired former TCAT students, comprise the Advisory Committee for the Dental Lab Technician program. These employers are able to provide guidance on the program's curriculum because they have first-hand knowledge of the skills and abilities of TCAT graduates. Additionally, these employers have come to trust and rely on TCAT graduates to fill job vacancies, sometimes even extending offers before a student completes the program.

Local employers also use TCATs as a resource for training their employees, as approximately one-third of TCAT enrollment comes from continuing education and specialized industry training. Some of these partnerships include:

- The Tennessee Electric Cooperative sends its electric line workers to TCAT Murfreesboro for continuing education and specialized industry training.
- The TCAT-Nissan Training and Education Center, part of TCAT Murfreesboro, will open in Smyrna in early 2017 to train TCAT students and Nissan employees.
- TCAT Memphis has a relationship with FedEx for its aviation program; FedEx provides training equipment, including current-model planes, while the TCAT trains future FedEx employees.
- TCAT Dickson has partnered with the Fort Campbell Army base to offer mechatronics training to veterans at its satellite campus in Clarksville, to help them obtain jobs with manufacturers in the area.

TCATs are closely linked to local school districts

Some TCATs and their local school districts have partnered to share faculty, space, and equipment. In some instances, the high school becomes a satellite TCAT campus and teachers become adjunct professors for the TCAT.⁵

In addition, high schools are increasingly aligning career and technical education (CTE) programs with the programs offered at the local TCAT. Most TCATs offer dual enrollment for high school students in a number of programs, allowing students to earn postsecondary credit while still in high school.⁶ TDOE encourages students enrolled in CTE programs to obtain industry certifications while in high school, which are transferable to a TCAT for clock hour credits. TDOE and TBR are currently working on additional ways to transfer credit between secondary schools and TCAT settings for students who complete CTE coursework or an industry credential.

Some students emerge from a successful TCAT experience with enhanced self-confidence and a desire to continue their education, based on OREA interviews with some students at TCAT Nashville. While individual higher education institutions may have agreements to accept credits from a TCAT, there is currently no formal statewide policy for the transfer of TCAT awards/hours to a community college or four-year setting. In 2014, SACSCOC policies were implemented that prevented workforce transfer credits, including those earned at a TCAT,

⁵ For example, Lawrence County High School and Summertown High School are both satellite campuses of TCAT Pulaski.

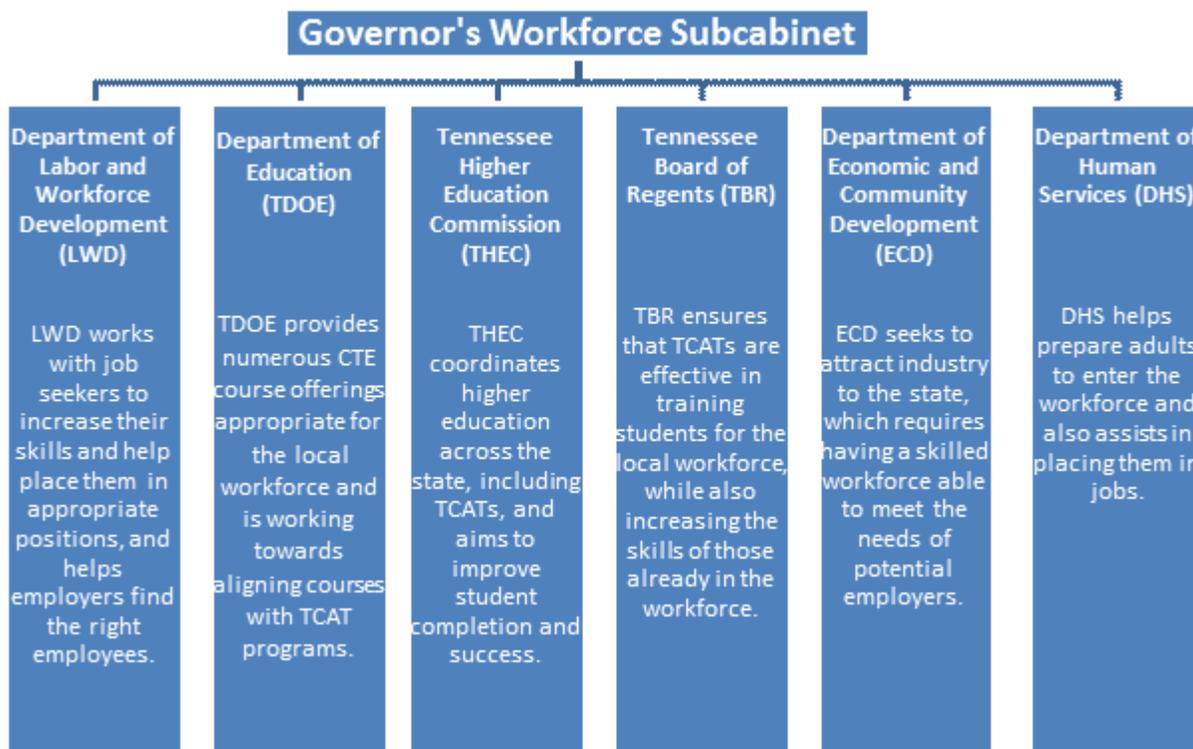
⁶ The TCAT/TDOE early postsecondary pilot offers dual enrollment opportunities in the following programs: diesel technology, cosmetology/barbering, automotive collision repair, mechatronics, and aviation maintenance. However, not all TCATs or high schools participate in the pilot. Individual TCATs may offer dual enrollment opportunities for programs not included in the pilot.

from being accepted at community colleges and universities, unless it is shown that the workforce credits were earned in courses with content and learning outcomes comparable to those offered at the potential transfer institutions. TBR staff has indicated that some institutions transfer credits more seamlessly than others.

Statewide industry initiatives involve TCATs

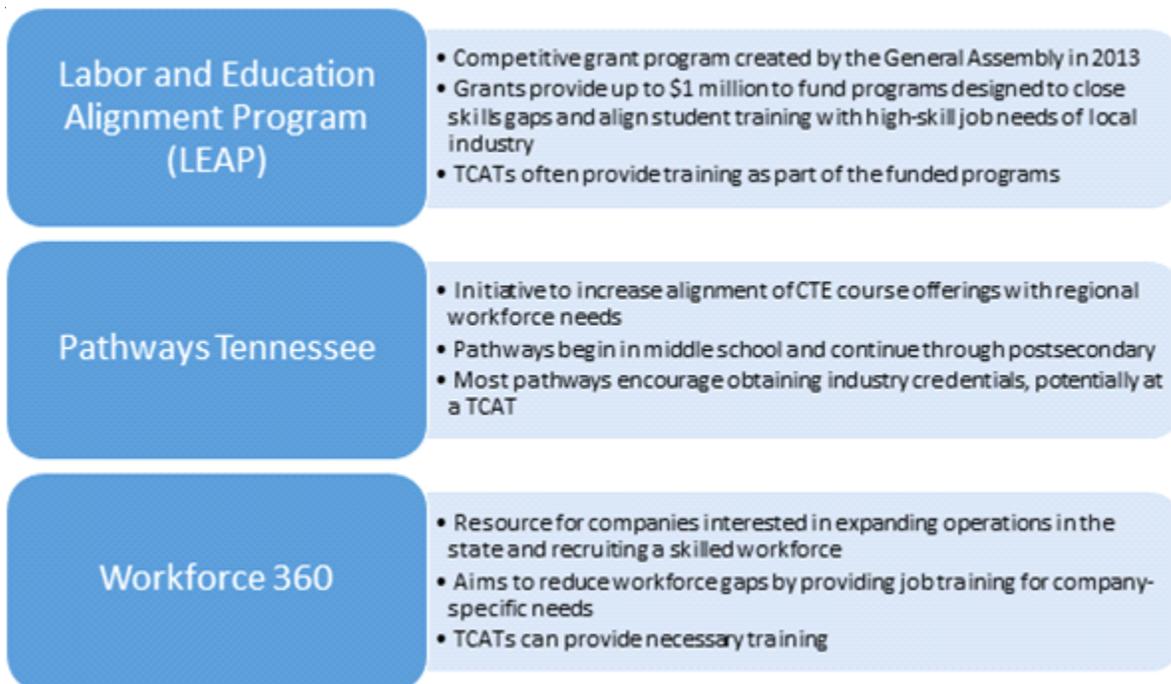
The Governor established a Workforce Subcabinet in 2014, which is responsible for developing and overseeing a strategic plan aligning state education and industry resources to support the Drive to 55. TCATs play an integral role in aligning these resources.

Exhibit 6: Governor’s Workforce Subcabinet Agencies



The Workforce Subcabinet oversees multiple workforce development programs, including those listed in [Exhibit 7](#).

Exhibit 7: Governor’s Workforce Subcabinet Programs

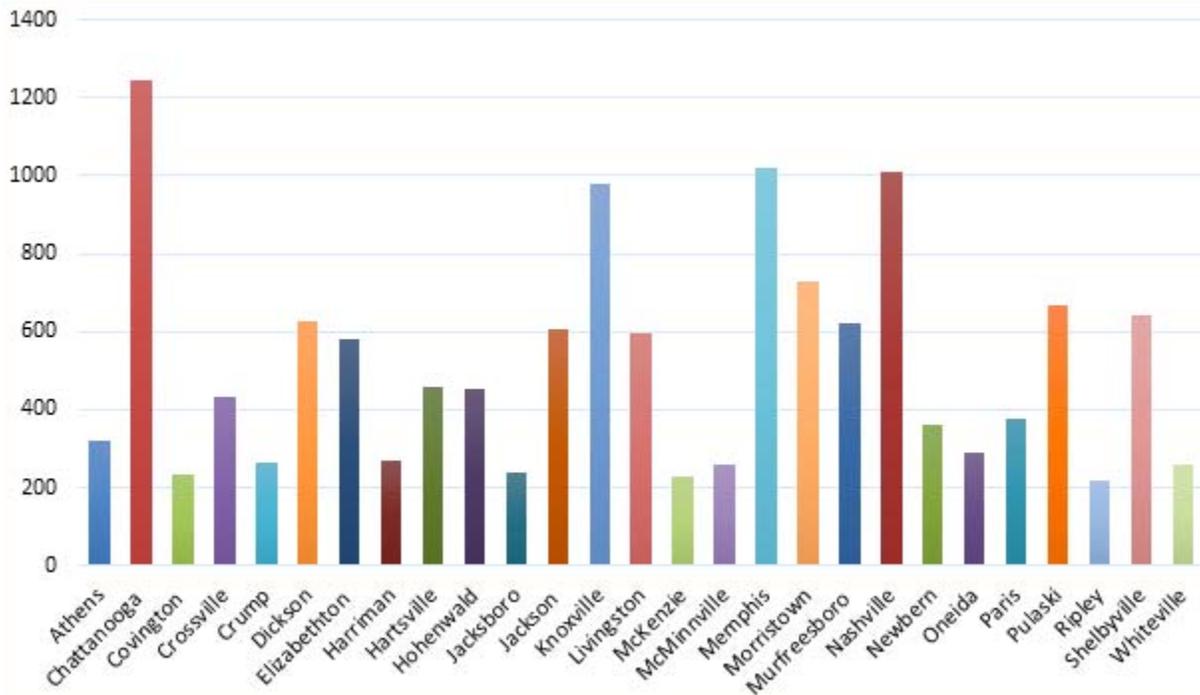


The Tennessee Council for Career and Technical Education (TCCTE) advises the SBOE, TBR, the Governor, and the General Assembly on CTE initiatives and helps develop a plan for CTE in the state. TCCTE’s most recent biennial report noted the growing number of technology-based jobs in the state and the success of TCATs in supplying workers for these positions.

TCATs are already making progress toward the Drive to 55

System-wide first-time freshman enrollment increased by 20 percent from fall 2014 to fall 2015. Overall FTE increased by 14 percent from fall 2014 to fall 2015. This growth brings FTE enrollment to the highest level in the past decade. To accommodate these students, TCATs have hired adjunct faculty to increase instructional capacity and have also started sharing space with industry partners and high schools to increase facility capacity. It is likely this increase in enrollment will lead to an increase in credentials awarded.

Exhibit 8: TCAT Fall 2015 FTE by Location



Source: Tennessee Board of Regents.

TCATs are Student Oriented and Outcome Focused

Students attending a TCAT do so to learn technical skills that directly translate to a career. The student body is mostly male and Pell Grant-eligible. There is a fairly even split between students over and those under 25 years old, though the student body is becoming increasingly younger. TCAT students often work full-time jobs and have family commitments, based on interviews with faculty. Individualized support and a case management system are two programmatic features of TCATs designed to help such students meet attendance requirements and complete their certificates or diplomas.

Programs are competency-based

Unlike higher education institutions that use a credit-hour system, TCAT programs are based on clock hours. Each program has an estimated number of hours to complete for the average student without prior experience. Students complete programs at their own pace, depending on their ability to demonstrate competencies; a student may complete a program ahead of the estimated number of hours, for example, or require more time than estimated. Students who arrive at a TCAT with work or education experience in their particular field of study may receive clock-hour credit for this prior knowledge, based on a transcript review or assessment results.⁷

⁷ This can be achieved through prior work experience, transfer credit, high school credits and/or industry certifications, and students' pacing through the material.

When students begin a TCAT program, they are required to take technology foundations,⁸ a computer-based course that focuses on basic skills needed to succeed in the student's chosen program and on the job. The coursework is individualized, self-paced, and competency-based. There are six competencies: applied math, reading, locating information, writing, listening, and teamwork. The course is tailored to the student's program of study and is completed at the same time as regularly planned coursework. Depending on the TCAT, the course may culminate in the Career Readiness Certificate assessment (WorkKeys), which gauges an individual's skill level in the six competencies.⁹

Costs are often covered by scholarships

The average cost of tuition and mandatory fees at a TCAT for the 2016-17 school year is \$3,648.¹⁰ There are additional costs for books, tools, and materials, which vary by program.¹¹ Several scholarship and grant programs subsidize the average cost of tuition and mandatory fees at a TCAT. Tennessee Promise and Tennessee Reconnect are two popular programs that provide last-dollar scholarships to recent high school graduates or adults returning to a TCAT. (See shaded box on page 2.) These awards cover all tuition and mandatory fees less all other grant aid. Below are some details about the other funding sources available for students:

- The Wilder-Naifeh Technical Skills Grant is a lottery-funded grant program for students seeking a diploma or certificate from a TCAT. In 2015-16, the award amount for students was \$2,000. A student is eligible for the award annually until graduation.
- A Pell Grant is federal aid for undergraduate students who qualify based on financial need, cost of attendance, status as full-time or part-time, and who plan to attend school for a full academic year or less. The maximum award amount for the 2016-17 school year is \$5,815. This is an example of grant aid that is applied before Tennessee Promise or Reconnect grant funds would be used.
- The Dual Enrollment Grant is one of the Tennessee Education Lottery Scholarships, and it provides grant funding for dual enrollment tuition and fees. The grant awards up to \$300 per semester. A student is eligible for an additional course per semester (award amount of \$600) if he or she is also eligible for the HOPE scholarship,¹² though students who receive more than four dual enrollment grants over their time in high school will have the additional amount reduced from their HOPE Scholarship awards.

⁸ Except practical nursing and some allied health programs, which have entry requirements.

⁹ The WorkKeys examination generates a score at one of four levels: Platinum, Gold, Silver, or Bronze. Each score level is associated with certain skills and level of difficulty completed. There is no pass/fail threshold requirement.

¹⁰ This figure includes all three trimesters in the 2016-17 academic year.

¹¹ Textbook and supply costs for the automotive technology program at TCAT Nashville are \$5,480. This is a program with higher supply costs than the average.

¹² Tennessee's HOPE Scholarship is a lottery-funded, merit-based scholarship for postsecondary education. Beginning in fall 2015, full-time freshmen and sophomores at four-year institutions receive up to \$1,750 per semester. The scholarship awards up to \$1,500 per semester for a student enrolled at a TCAT.

Successful outcome measures

Students at TCATs complete their programs, pass their licensure examinations, and are placed in jobs directly related to their program of study at high rates compared to other similar institutions in the state. Students at TCAT Nashville interviewed by OREA cited the high job placement rate as one of the reasons they chose to attend a TCAT.

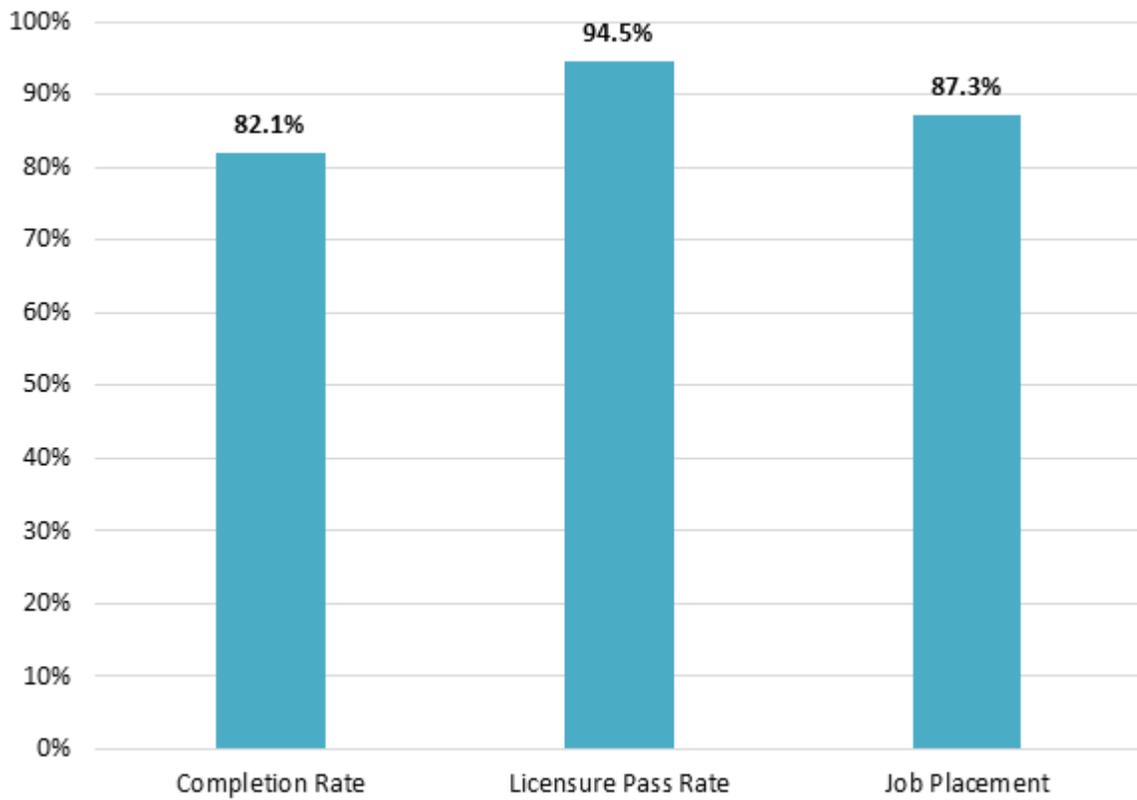
Exhibit 9: 2014-15 Completion and Job Placement Rates by TCAT Location

	Completion Rate	Job Placement Rate
Athens	79.60%	87.60%
Chattanooga	77.70%	94.20%
Covington	73.60%	79.90%
Crossville	88.30%	85.50%
Crump	79.00%	89.40%
Dickson	83.80%	84.80%
Elizabethton	84.30%	92.20%
Harriman	94.60%	89.70%
Hartsville	81.30%	87.70%
Hohenwald	91.60%	88.60%
Jacksboro	90.80%	88.60%
Jackson	83.40%	91.70%
Knoxville	80.00%	90.20%
Livingston	83.80%	86.80%
McKenzie	72.90%	87.60%
McMinnville	80.10%	81.60%
Memphis	84.10%	78.40%
Morristown	77.60%	93.70%
Murfreesboro	84.40%	79.30%
Nashville	75.40%	80.80%
Newbern	82.20%	82.50%
Oneida/Huntsville	87.30%	82.10%
Paris	82.40%	88.40%
Pulaski	92.10%	81.20%
Ripley	87.60%	90.30%
Shelbyville	85.90%	86.70%
Whiteville	80.20%	87.30%

Note: The job placement rate includes only students who have completed the program and who are seeking employment in their field of study.

Source: Tennessee Higher Education Commission.

Exhibit 10: 2014-15 Completion and Licensure Pass Rates for TCAT System



Note: Job Placement data is reported by students and accounts for those students who find a job related to their field of study.

Source: Tennessee Higher Education Commission.



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