Fulfilling the Promise of Technical Education: 
The Impact of State Policy on Technical Colleges in Tennessee

TBR—The College System of Tennessee

2019 SHEEO Higher Education Policy Conference
Technical Colleges in Tennessee

• Twenty-seven Tennessee Colleges of Applied Technology (TCATs) serve students in technical programs across the state.
• TCATs award sub-associate diplomas and certificates.
• TCATs are governed by the Tennessee Board of Regents and are part of the College System of Tennessee, alongside 13 community colleges.
• Recent policy shifts have placed a renewed emphasis on the role of TCATs in meeting the state’s educational attainment goals and workforce training needs.
How do TCATs serve students?

• Competency-based, clock hour trimester system.

• Open entry programs with rolling admissions.

• Full-time students attend class for 30 hours per week, five days a week, and typically earn diplomas or certificates in three to five trimesters.

• Class sizes are typically around 20 students, and there is typically only one faculty member per program on each campus.

• In 2017-18, nearly 20,000 students were enrolled in a “preparatory” diploma or certificate program.
  • 62% of these students were male, and 30% were over age 25.
  • Another 10,000 were enrolled in supplemental training programs.
About TCATs

- 27 Colleges; 50+ Teaching Sites
- Serving 29,000 students per year
- 82% completion rate in 2017-18
- 89% job placement rate in 2017-18
- Responsible for 10% of the postsecondary credentials needed to meet the state’s Drive to 55
State Policy Context

• Since 2015, **Tennessee Promise** has given recent high school graduates the opportunity to attend a TCAT free of tuition and mandatory fees.

• **TCAT Reconnect** has provided a last-dollar scholarship for adult students.

• The **Wilder-Naifeh Technical Skills Grant** provides up to $2,000 a year to any Tennessee citizen age 18 or older who enrolls at a TCAT.

• The state’s **dual enrollment grant** provides funds for high school students who enroll in TCAT programs.

• In 2019, **the GIVE Act** (Governor’s Investment in Vocational Education) provided additional support for dual enrollment in CTE programs and funding for regional partnerships focused on work-based learning and apprenticeships.
Enrollment data includes students across all trimesters in an academic year. Awards include certificates and diplomas awarded during the academic year.

### TCAT Preparatory Students

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15</td>
<td>17,400</td>
</tr>
<tr>
<td>2015-16</td>
<td>19,602</td>
</tr>
<tr>
<td>2016-17</td>
<td>19,668</td>
</tr>
<tr>
<td>2017-18</td>
<td>19,831</td>
</tr>
</tbody>
</table>

### TCAT Diplomas & Certificates

<table>
<thead>
<tr>
<th>Year</th>
<th>Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>7,038</td>
</tr>
<tr>
<td>2014-15</td>
<td>7,528</td>
</tr>
<tr>
<td>2015-16</td>
<td>7,470</td>
</tr>
<tr>
<td>2016-17</td>
<td>7,709</td>
</tr>
<tr>
<td>2017-18</td>
<td>7,219</td>
</tr>
</tbody>
</table>
Top Programs of Study at TCATs

- Practical Nursing: 14%
- Welding: 13%
- Automotive Technology: 6%
- Cosmetology: 6%
- Machine Tool Technology: 5%
- Administrative Office Technology: 4%
- HVAC-R: 4%
- Computer Information Technology: 4%

Note: Includes TCAT students enrolled in preparatory programs in fall 2018.
Key Questions

• What role do technical colleges play in meeting the state’s educational attainment goal and workforce needs?

• How have state policies, like Tennessee Promise, altered the profile of technical colleges?

• How do outcomes for students at TCATs compare to similar students at community colleges?

• What policies and practices contribute to student success at TCATs? What can other systems and sectors learn about student success from TCATs?
State Policy and the Changing Profile of TCATs
Previous Research about TCATs

- Adults who earn a diploma from a TCAT gain access to **new industries** and **earn more** than non-completers and similar non-students (Carruthers & Sanford 2018).
- **In 2015**, the gap in college enrollment between high school CTE concentrators and other students closed in Tennessee (Carruthers & Attridge 2019).
- **5%** of CTE concentrators enroll in a TCAT right after high school graduation, compared to **3%** of non-concentrators (Carruthers & Attridge 2019).
TCATs and State Policy Initiatives

**In 2015-16:**
- 3,000+ TCAT students received dual enrollment grants.
- 1,500+ TCAT students received Reconnect grants.
- 2,000+ TCAT students participated in Tennessee Promise.

**From fall 2014 to fall 2015:**
- TCAT enrollment increased by 14%.
- TCAT dual enrollment increased by 21%.
- First-time TCAT enrollment increased by 42%.
- Enrollment of adults (age 25+) increased by 9%.
- Statewide unemployment rates decreased from 6.6% to 5.5%.
Destination of TN High School Graduates

- **TBR Community Colleges**
- **University of Tennessee**
- **Other Public Universities**
- **TCATs**

Source: Tennessee Higher Education Commission; 2018-19 Tennessee Higher Education Factbook
The Changing Profile of TCAT Students

First-Time Students at TCATs, 2007-2017

Note: Includes preparatory students who began in the fall trimester as first-time students at a TCAT. First-time students are those who have not previously accumulated any clock hours or who are enrolling at a TCAT within one year of completing high school. Excludes dual enrollment students and students in special industry/continuing education programs.

Note: Includes preparatory students who began in the fall trimester as first-time students at a TCAT. First-time students are those who have not previously accumulated any clock hours or who are enrolling at a TCAT within one year of completing high school. Excludes dual enrollment students and students in special industry/continuing education programs.
The New TCAT Student

First-Time Students who were Recent High School Graduates, By Gender

First-Time Students who were Recent High School Graduates, By Race
Programs of Study for First-Time Students

- Practical Nursing
- Industrial Maintenance/Mechatronics
- Administrative Office Technology
- Welding
- Automotive Technology
- Cosmetology
- Machine Tool Technology
- Computer Information Technology

2014 Cohort
2015 Cohort
2015 Recent HS Graduates
Tennessee Promise at TCATs
How does Promise work at TCATs?

• Each year, around 2,000 new Tennessee Promise participants enroll at TCATs.
  • By contrast, around 13,000 new Promise students enroll at TBR community colleges each fall.

• Tennessee Promise serves as a **last-dollar scholarship** that gives recent high school graduates the opportunity complete a diploma or certificate program free of tuition and mandatory fees.

• Promise students **must enroll full-time** in the fall semester immediately following high school graduation.
1,592 Promise Students at TCATs in Fall 2015

- **White**: 79%
- **Black**: 8%
- **Hispanic**: 4%
- **Female**: 27%
- **First Generation**: 52%
- **ACT < 19**: 76%

13,287 Promise Students at Community Colleges in Fall 2015

- **White**: 79%
- **Black**: 12%
- **Hispanic**: 4%
- **Female**: 56%
- **First Generation**: 41%
- **ACT < 19**: 43%

*Note: TCAT Promise students include preparatory and supplemental students enrolled in the fall 2015 trimester. Community college Promise students are degree-seeking students who enrolled as first-time freshmen in fall 2015. Includes students who completed the Tennessee Promise application and eligibility requirements, even if their tuition and fees in fall 2015 included $0 from Promise.*
Graduation Rates after Five Semesters

Note: Graduation rates include students who earned a technical certificate, diploma, or degree with five semesters of initial enrollment. Community college outcomes include data from the National Student Clearinghouse. TCAT outcomes include credentials earned at a TCAT or community college.
Three-Year Graduation Rates for TCAT Students

- Recent High School Graduates
  - Fall 2013 Cohort: 72%
  - Fall 2014 Cohort: 77%
  - Fall 2015 Cohort: 71%

- Non-Recent High School Graduates Under Age 24
  - Fall 2013 Cohort: 67%
  - Fall 2014 Cohort: 71%
  - Fall 2015 Cohort: 66%

- Between Age 25 and 34
  - Fall 2013 Cohort: 67%
  - Fall 2014 Cohort: 76%
  - Fall 2015 Cohort: 70%

- Between Age 35 and 49
  - Fall 2013 Cohort: 71%
  - Fall 2014 Cohort: 73%
  - Fall 2015 Cohort: 64%

Note: Includes preparatory students who began in the fall trimester as first-time students at a TCAT. First-time students are those who have not previously accumulated any clock hours or who are enrolling at a TCAT within one year of completing high school. Excludes dual enrollment students and students in special industry/continuing education programs. TCAT completers are students who earned a diploma or certificate or a higher award within three years of enrollment as a first-time student.
TCAT Graduates in the Labor Market

- Using the state’s longitudinal data system, we can examine UI wage data and identify TCAT students in the labor market three years after initial enrollment.

- Employment outcomes were most positive for TCAT graduates who entered as recent high school graduates.

- **Among recent high school graduates who first enrolled in fall 2015:**
  - 73% of TCAT completers were identified in the employment data, compared to 70% of non-completers.
  - On average, TCAT completers earned 41% more per quarter in 2018 than non-completers from the same cohort.
  - These additional earnings translate to $1,800+ more per wage quarter for TCAT completers than non-completers.
TCAT Students in the Labor Market by Industry of Employment (Fall 2015 Cohort)

<table>
<thead>
<tr>
<th>Industry of Employment</th>
<th>TCAT Completers</th>
<th>Non-Recent High School Graduates Under Age 24</th>
<th>Between Age 25 and 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>28%</td>
<td>16%</td>
<td>12%</td>
</tr>
<tr>
<td>Construction</td>
<td>12%</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>12%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Administrative and Support Services</td>
<td>9%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>8%</td>
<td>27%</td>
<td>38%</td>
</tr>
<tr>
<td>TCAT Non-Completers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>23%</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Administrative and Support Services</td>
<td>17%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>13%</td>
<td>17%</td>
<td>*</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>10%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>8%</td>
<td>15%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Note: Employment outcomes are based on the UI wage data collected by the Tennessee Department of Labor and Workforce Development. For the fall 2015 cohort, wage date is current as of third quarter 2018. Industries of employment are based on the two-digit NAICS code associated with the employer.
• Technical colleges play an important role in the state’s education goals and workforce needs.

• The “typical” TCAT student has changed over time.
  • The percent of new TCAT students each fall who are recent high school graduates has risen.
  • These students are more likely to be male, more likely to be white, and more likely to enroll in technical and mechanical programs than other TCAT students.

• Tennessee Promise students at TCATs earn postsecondary credentials at three times the rate of community college Promise students, despite lower average levels of academic preparation.

• Students who enroll at TCATs directly after high school are succeeding at high rates in postsecondary completion and labor market outcomes.
Future Research

• How have TCATs responded to changing student demographics and needs?
• How do employment outcomes for TCAT completers evolve over time?
• Can new access to TCAT data help us learn more about student success in career and technical programs?
• What can other sectors and systems learn about student success from Tennessee’s technical colleges?
TBR—The College System of Tennessee
Office of Policy and Strategy

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