

iCEV | 2024

Health Care Workforce Shortage:

The Impact of
Career & Technical Education

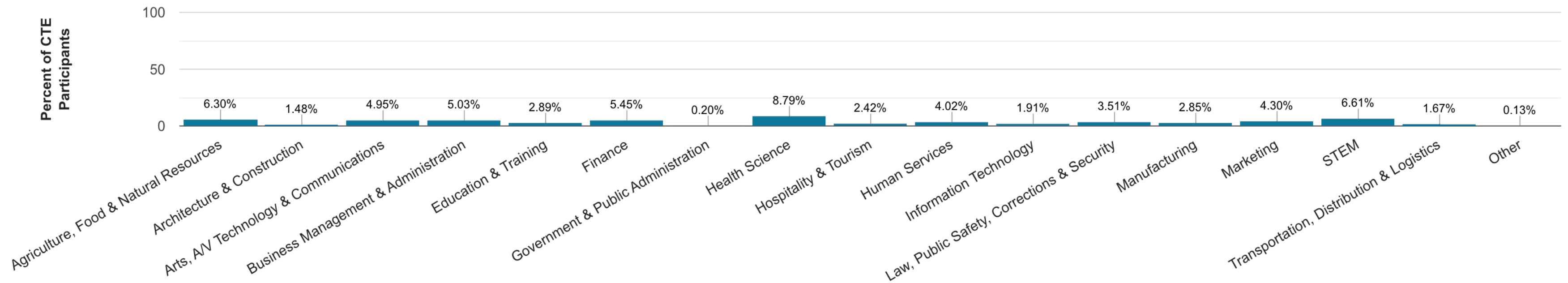
Dusty Moore
iCEV



Texas Secondary CTE Health Science Programs

CTE Participants

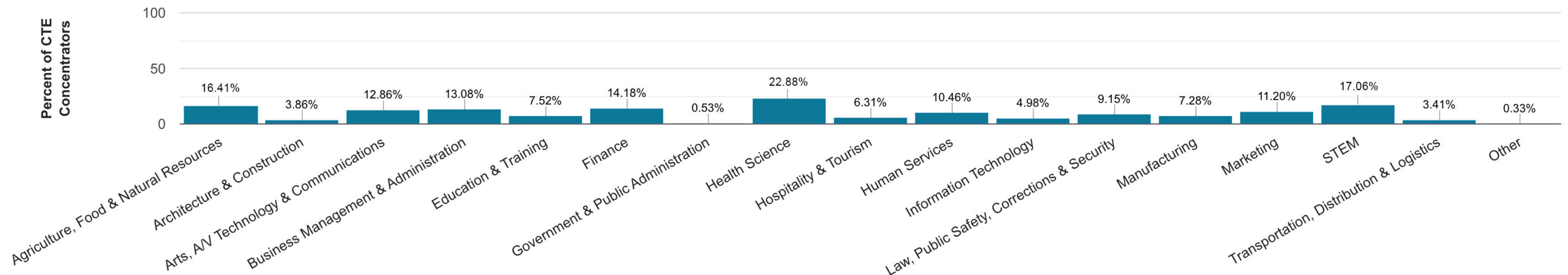
In 2021-2022, there were 1,792,279 secondary career and technical education (CTE) participants in Texas. The top four career clusters among secondary CTE participants were Health Science (8.79 percent), Science, Technology, Engineering & Mathematics (6.61 percent), Agriculture, Food & Natural Resources (6.30 percent), Finance (5.45 percent).¹



Texas Secondary CTE Health Science Programs

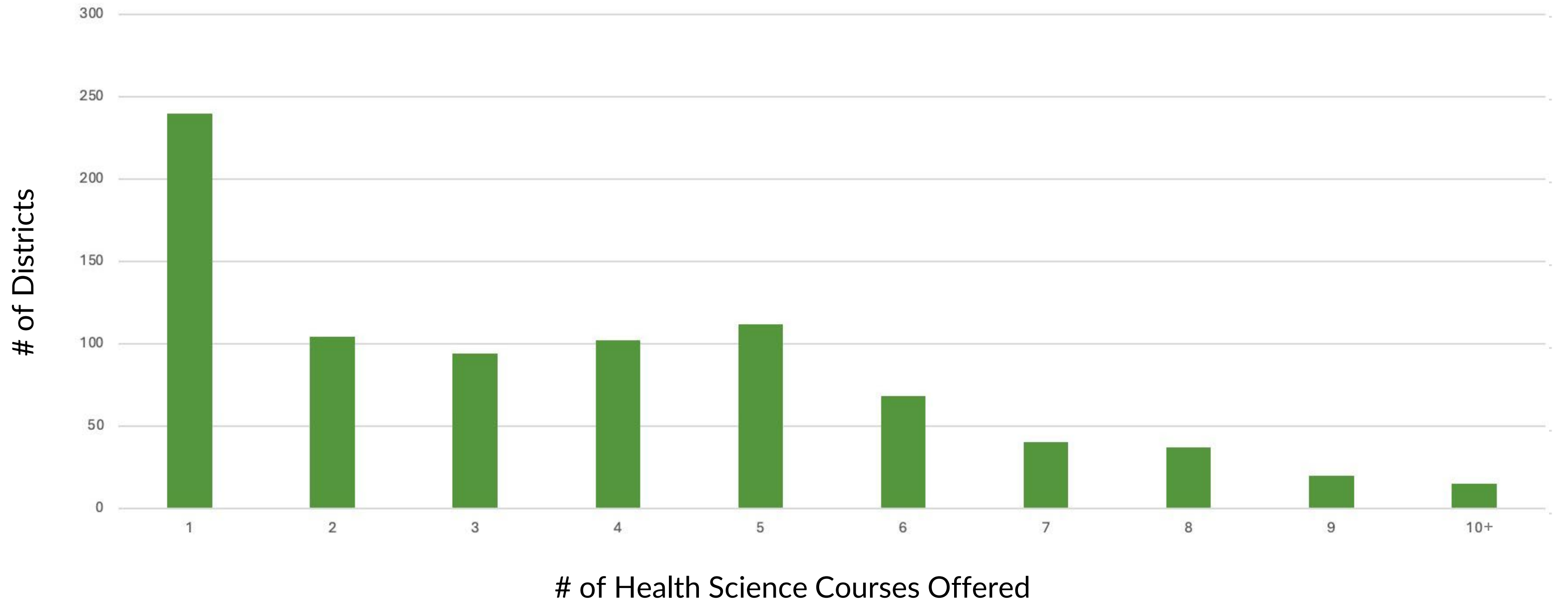
CTE Concentrators

In 2021-2022, there were 688,418 secondary career and technical education (CTE) concentrators in Texas. The top four career clusters among secondary CTE concentrators were Health Science (22.88 percent), Science, Technology, Engineering & Mathematics (17.06 percent), Agriculture, Food & Natural Resources (16.41 percent), Finance (14.18 percent).²



Texas Secondary CTE Health Science Courses

of Health Science CTE Courses Offered Per District³



Texas Secondary CTE Health Science Programs

5 Health Science Programs of Study

1. **Exercise Science, Wellness and Restoration**
2. **Health Informatics**
3. **Diagnostic & Therapeutic Services**
4. **Nursing Science**
5. **Biomedical Science**

Top 10 Enrolled Health Science Courses

1	Anatomy & Physiology
2	Principles of Health Science
3	Medical Microbiology
4	Practicum in Health Science
5	Health Science Theory
6	Health Science Theory/Clinical
7	Pathophysiology
8	Principles of Biomedical Science
9	Medical Microbiology
10	Human Body Systems

Nursing Science Program of Study

by TEA

The Texas Nursing Science program of study is designed to prepare high school students for careers in patient care. The curriculum spans four levels, offering courses from basic principles of health and nursing to advanced topics like pathophysiology and pharmacology.

Students also gain practical experience through work-based learning and earn industry certifications such as Certified Nurse Aide (CNA) or Registered Nurse.⁴

Aligned Industry-Based Certifications

- Certified Clinical Medical Assistant
- Certified Nurse Aide (CNA)
- Licensed Vocational Nurse
- Medical Assistant
- Patient Care Technician
- Phlebotomy Technician
- Registered Nurse

Revised—June 2024

Health Science Career Cluster

The Health Science career cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. This career cluster includes occupations ranging from medical assistant, registered nurse, and physical therapist to forensic science technician and athletic trainer.

Statewide Program of Study: **Nursing Science**

The Nursing Science program of study focuses on occupational and educational opportunities associated with patient care. This program of study includes the practice of caring for patients, performing routine procedures such as monitoring vital signs, developing, and implementing care plans, maintaining medical records, and managing disease or pain.

Secondary Courses for High School Credit

	Level 1	<ul style="list-style-type: none"> • Principles of Health Science • Principles of Nursing Science
	Level 2	<ul style="list-style-type: none"> • Science of Nursing • Medical Terminology
	Level 3	<ul style="list-style-type: none"> • Health Science Theory • Health Science Theory + Health Science Clinical • Anatomy and Physiology • Medical Microbiology • Leadership and Management in Nursing • Clinical Ethics
	Level 4	<ul style="list-style-type: none"> • Pathophysiology • Pharmacology • Practicum in Nursing • Practicum in Health Science • Practicum in Health Science + Extended Practicum in Health Science • Career Preparation for Programs of Study • Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

AP or IB	AP Biology IB Biology SL IB Biology HL	AP Chemistry IB Chemistry SL IB Chemistry HL
Dual Credit	Dual credit offerings will vary by local education agency.	

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> • Intern with a medical assistant at a community clinic, hospital, or assisted living facility • Conduct informational interviews with nurses in different departments and healthcare settings
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Volunteer at community clinics, hospitals, assisted living and long-term care facilities • Participate in HOSA or SkillsUSA

Aligned Industry-Based Certifications

<ul style="list-style-type: none"> • Certified Clinical Medical Assistant • Certified Nurse Aide (CNA) • Licensed Vocational Nurse • Medical Assistant 	<ul style="list-style-type: none"> • Patient Care Technician • Phlebotomy Technician • Registered Nurse
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Example Postsecondary Opportunities

- Apprenticeships**
 - Registered Nurse Resident
- Associate Degrees**
 - Medical Assisting
 - Vocational Nursing
- Bachelor's Degrees**
 - Registered Nursing
 - Nursing Administration
- Master's, Doctoral, and Professional Degrees**
 - Nursing Administration
 - Nursing Science
- Additional Stackable IBCs/License**
 - Certified Emergency Nurse

Example Aligned Occupations

Nursing Assistants

Median Wage: \$30,856
Annual Openings: 10,936
10-Year Growth: 15%

Licensed Practical and Licensed Vocational Nurses

Median Wage: \$50,913
Annual Openings: 6,865
10-Year Growth: 17%

Registered Nurses

Median Wage: \$79,831
Annual Openings: 16,207
10-Year Growth: 17%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.

For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study/additional-resources>

Successful completion of the Nursing Science program of study will fulfill requirements of the Public Services endorsement or the STEM endorsement if the math and science requirements are met.

Nursing Science

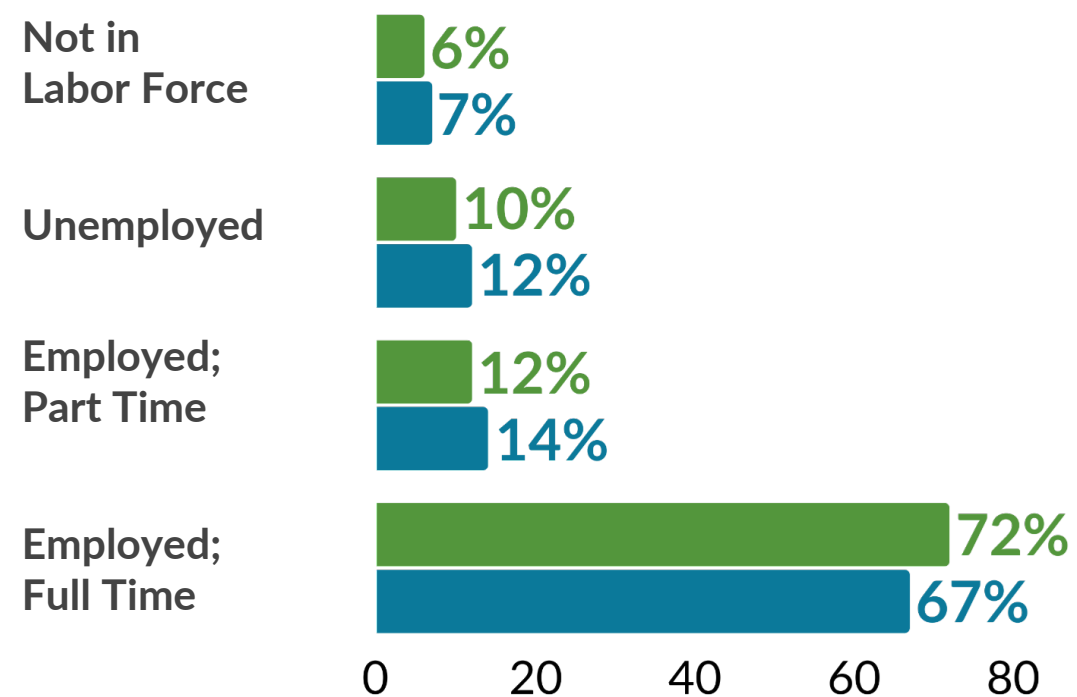
CTE Improves Outcomes

Credentialing Students via CTE

Access to industry certifications via CTE allows students to demonstrate capability to employers immediately after graduation. According to the National Healthcareer Association, districts currently offer a variety of industry recognized professional credentialing exams, giving students the ability to demonstrate job skills more readily.⁵

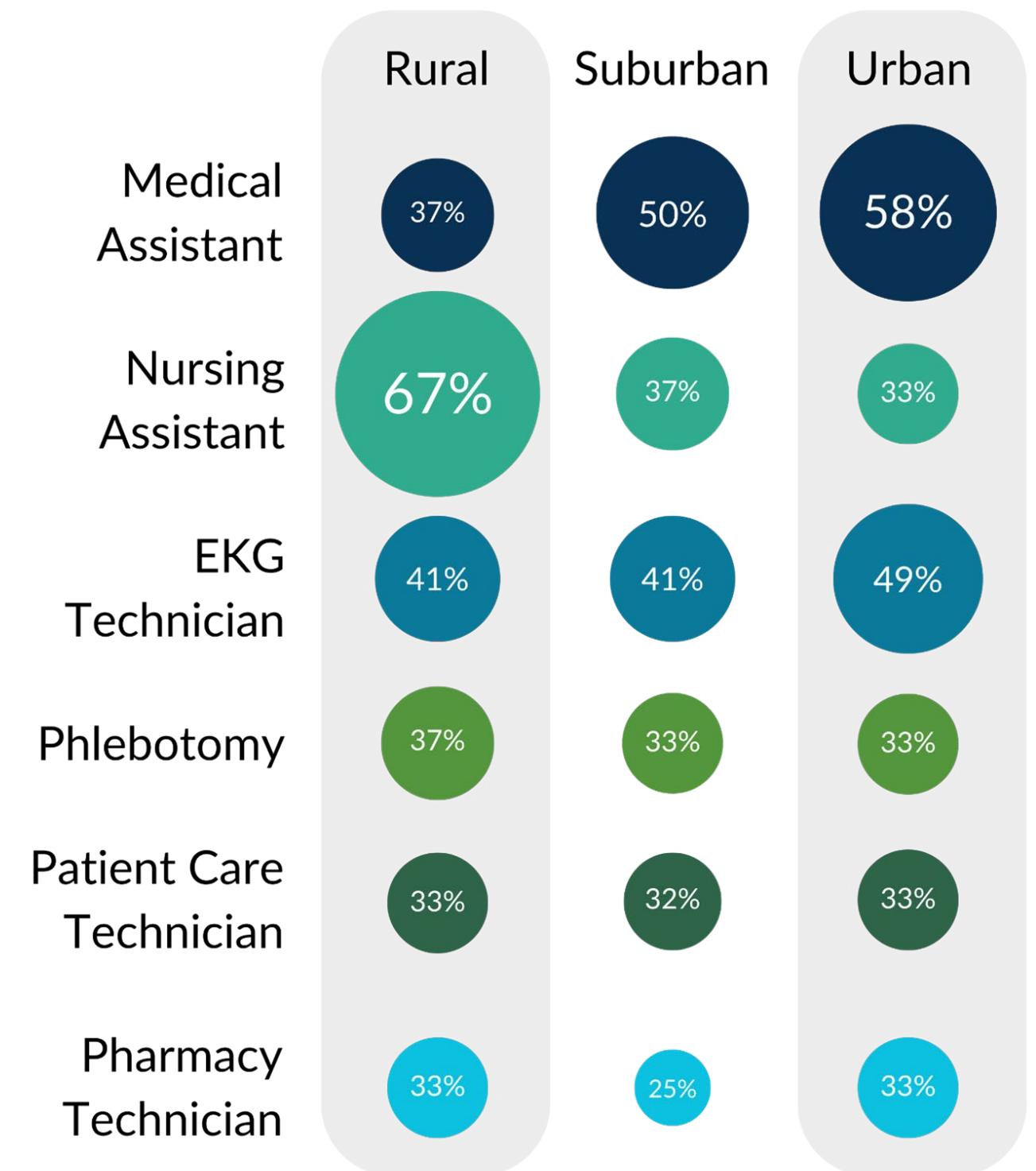
Improved Professional Success

Employment Status of CTE-Completers and Non-Completers 8 Years After Graduation



Further underscoring the benefits of CTE education, students who complete 2 or more courses in a single CTE pathway are 5% more likely to be employed full time and are 4% less likely to be working part time or unemployed 8 years after graduating from high school.⁶

Most Popular Recognized Professional Credential Exams Offered by District Type⁵



CTE Leadership Perspective

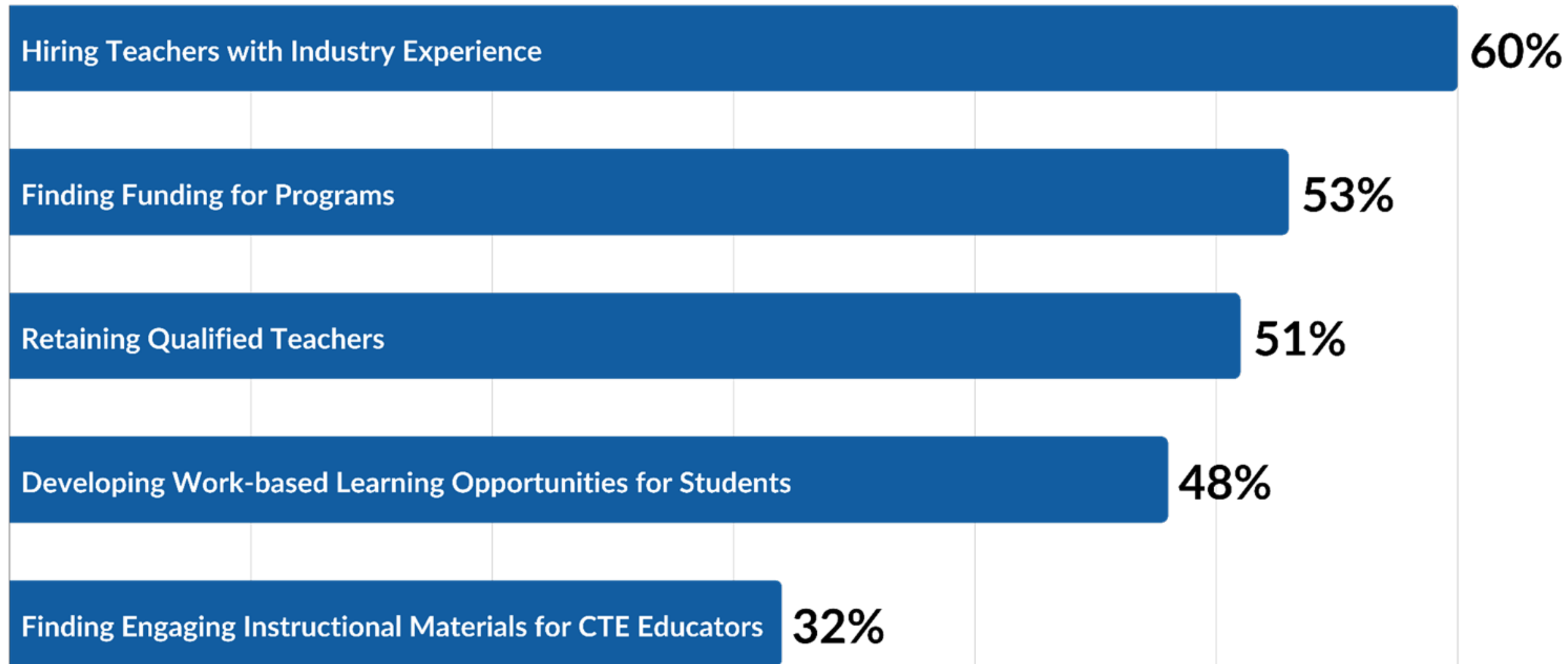
60%

Sixty percent of district CTE leaders cite “Hiring teachers with industry experience” as the number 1 challenge they face.

n=113 district leaders
Primary research conducted by Catapult X on behalf of ICEV

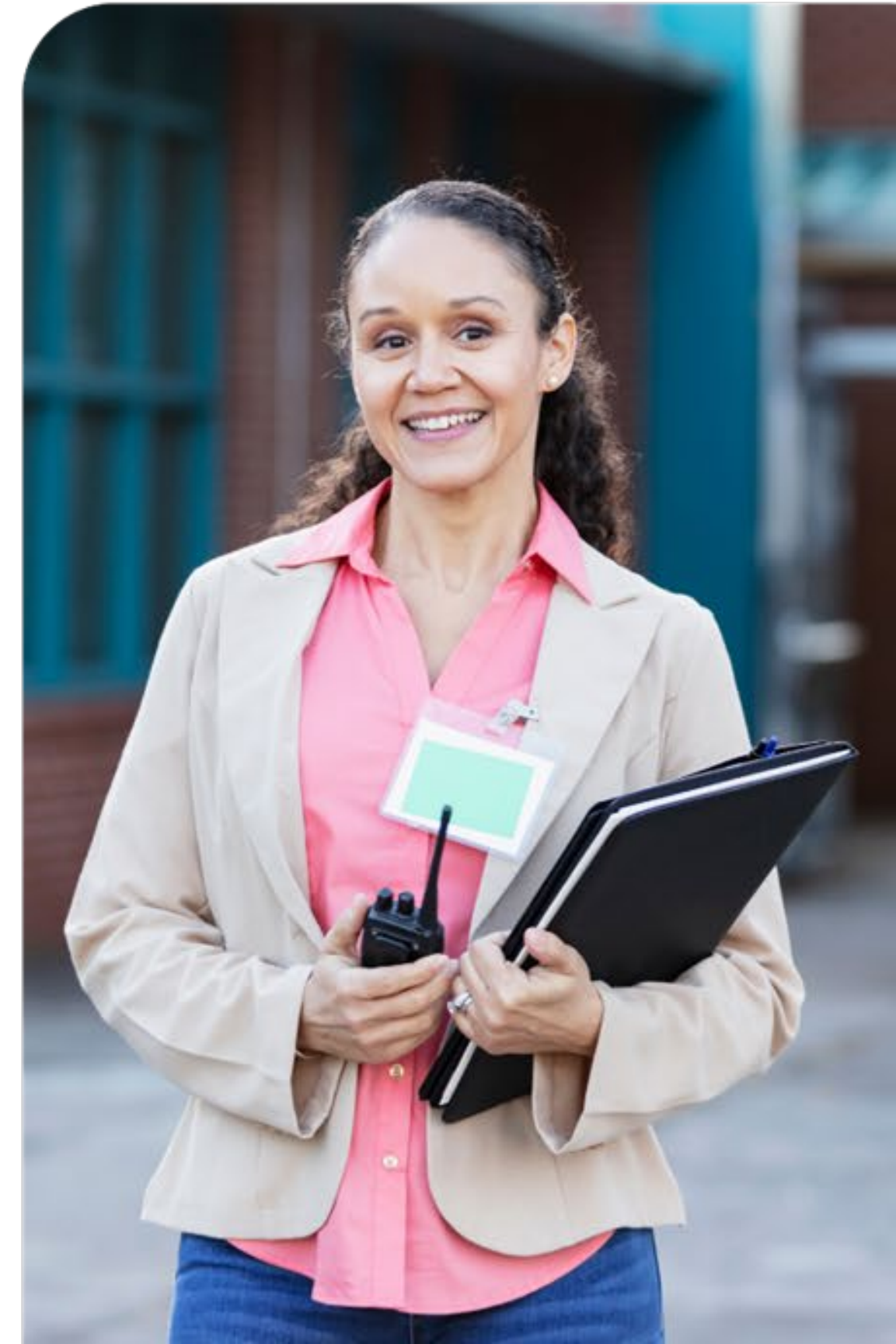


Top 5 Challenges District CTE Leaders Report



n=113

Primary research conducted by Catapult X on behalf of iCEV

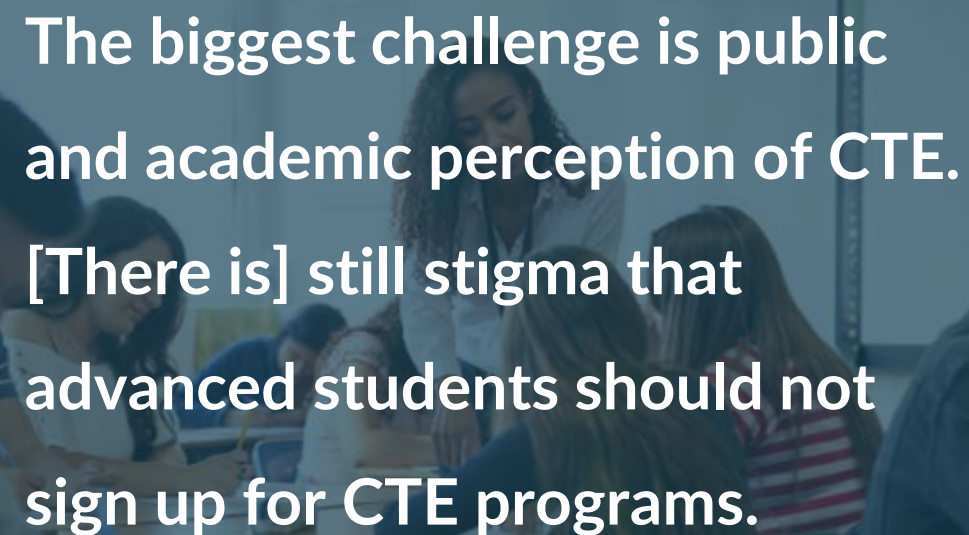


Educator Voices

35

states reported CTE teacher shortages in manufacturing, information technology, and health sciences

Staff, K. (2023, February 27). We need to know more about CTE teachers - Kappan Online. Kappan Online. <https://kappanonline.org/more-research-on-cte-teachers-anglum/>



The biggest challenge is public and academic perception of CTE. [There is] still stigma that advanced students should not sign up for CTE programs.

Conflicting Priorities

“So much to teach with so little time. Last-minute changes [to] students' schedules [and absences] due to testing such as AP, SATs, etc.”

- *School Nurse, RN*

Industry-alignment Challenges

“One of the biggest challenges in teaching health science for CTE is keeping the curriculum up-to-date with rapidly evolving medical knowledge and technologies, ensuring students receive relevant and practical skills that align with industry standards.”

- *Medical Arts Instructor*

Hands-On Experiences

“Virtual [simulations are] great for develop[ing] decision making, but cannot replace physical simulation for skill development.”

- *Health Sciences Teacher*

Student Prerequisites

There is a disconnect between what guidance counselors believe the necessary “level of skill and knowledge that is needed to work in a health science field, and they often place students into my program that do not have the prerequisite[s] or abilities to do well in the course.”

- *Health Careers Instructor*

Ensure High Quality Instructional Materials (HQIM) Are Available for Secondary Health Science CTE Teachers

Passage of HB1605 establishes a new process for the State Board of Education to adopt HQIM for classroom use.⁷

Per TEA, HQIM are defined as:⁸

- Materials ensuring full coverage of Texas Essential Knowledge and Skills
- Align with research based instructional strategies in each subject area
- Support all learners

Recommendations:

- Prioritize most in-demand health science occupations with HQIM process
- Conduct HQIM process for the entire program of study in one cycle to ensure proper scaffolding of courses and materials
- Continue supporting current Health Science programs by bolstering funds available through the Instructional Materials Allotment

First HQIM process currently in motion

Jobs & Education for Texans (JET) Grant Program

JET Program provides grants to buy and install equipment for Career and Technical Education (CTE) courses. Courses must lead to a license, certificate or post-secondary degree in a high-demand occupation.⁹

For FY 24-25 Biennium \$30 million was allocated

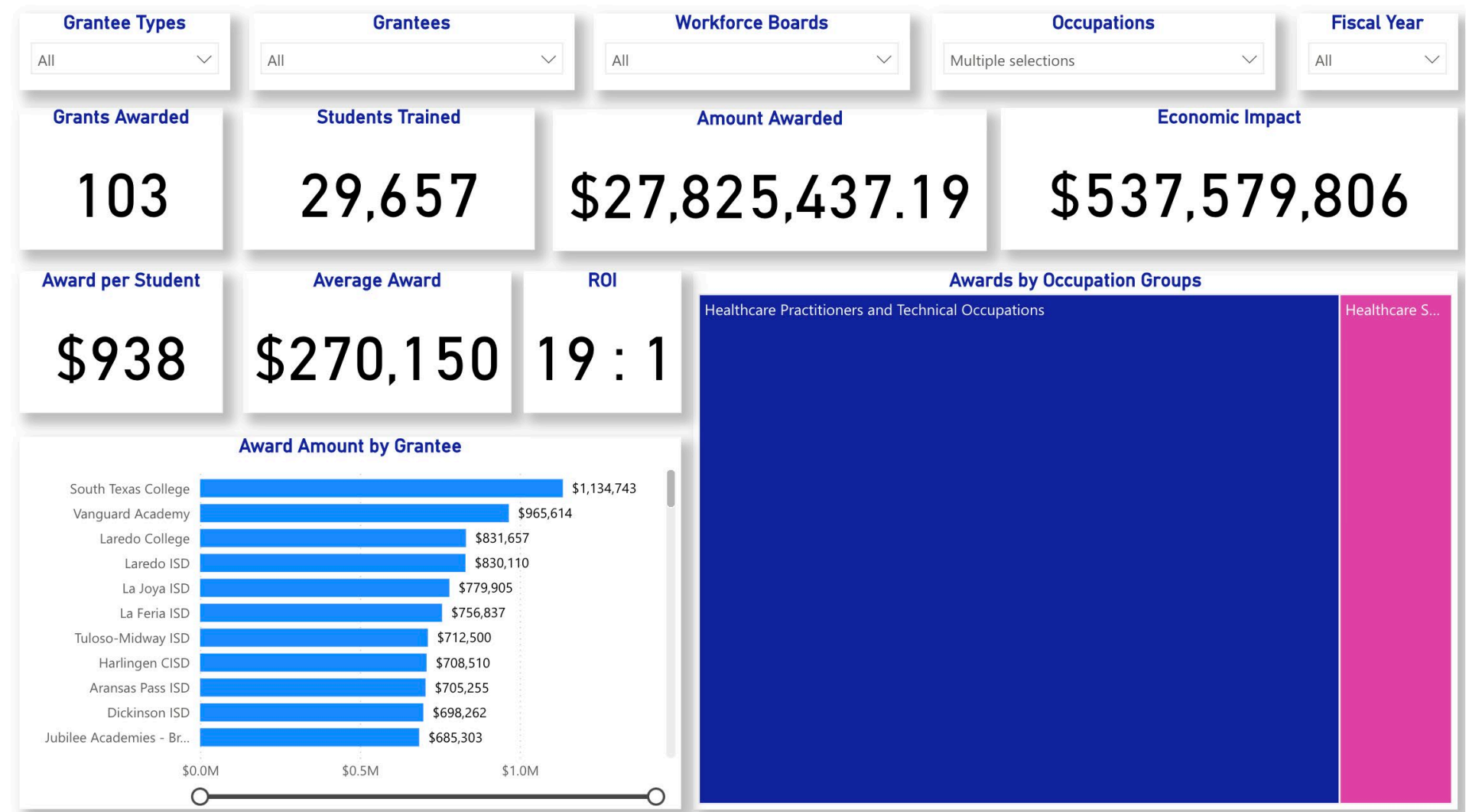
Grants provide potential economic returns through:

- Supporting emerging industries or high-demand occupations
- Offering new or expanded CTE opportunities in public high schools

Recommendation:

- Expand JET program for more districts and post-secondary institutions to offer new health science programs

Applicants may request between \$40,000 - \$350,000



[Explore Previous JET Awards »](#)

Thank you! Questions?

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