## CAREER TECHNICAL EDUCATION (CTE)

# THINK TANK REPORT

*June 16, 2025, Draft*

*Prepared by Cooperative Education Services*
*David Chavez, Executive Director*

Rural CTE Alliance
for our Future Workforce

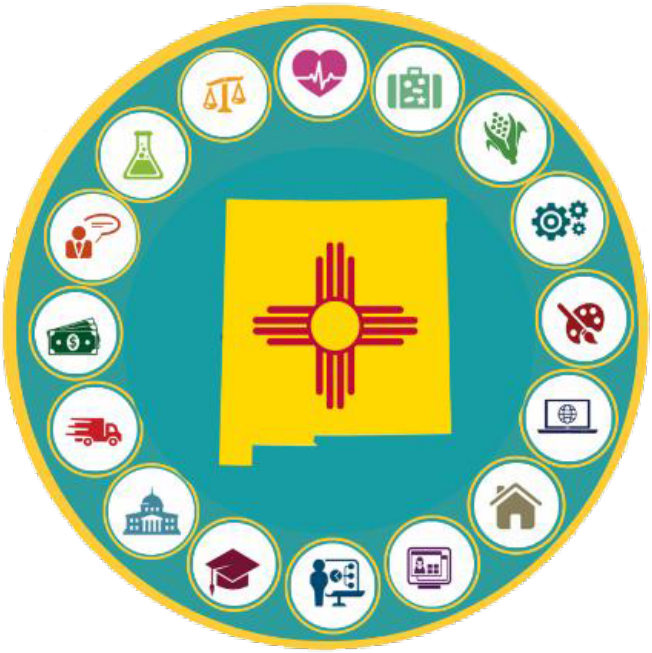
CES Simplify procurement. Maximize results.

NORTHERN New Mexico College

LANL FOUNDATION
*Investing in Learning & Human Potential*

NEW MEXICO
Public Education Department

New Mexico Department of WORKFORCE SOLUTIONS



# I. EXECUTIVE SUMMARY

The Alliance for Our Future Workforce convened a Career Technical Education (CTE) Think Tank conference on June 12, 2025, to gather diverse perspectives and actionable insights on strengthening CTE programs across New Mexico, with a particular focus on rural communities.

The conference aimed to foster collaboration among educators, industry leaders, policymakers, and community stakeholders to align Career and Technical Education (CTE) programs with workforce needs, promote equity, and prepare students for both college and careers. Key discussions highlighted:

- The critical role of high-quality Career and Technical Education (CTE) in driving economic growth and increasing graduation rates
- Addressing challenges related to funding, staffing, access, and sustaining industry partnerships
- The need for a collaborative, data-driven approach to ensure that CTE programs are responsive, relevant, and accessible to all New Mexico students

Deliverables included this conference report, video recordings, proposed legislation, action plans for schools and school districts, a networking directory, webinars and workshops, and policy briefs.

# TABLE OF CONTENTS



Think Tank Presentations

# II. PURPOSE OF THE CONFERENCE

The CTE Alliance for Our Future Workforce organized this Think Tank with a clear objective: to invite ideas and insights from diverse stakeholders on how CTE programs can better prepare students for success in both college and careers.

The conference served as a platform for participants to:

1. Share unique experiences and expertise to shape curriculum, training opportunities, and partnerships.
2. Identify essential skills, tools, and technologies required for students entering various fields and industries.
3. Gather diverse perspectives on what modern CTE programs should include.
4. Foster collaboration among all stakeholders – educators, industry leaders, policymakers, and community members.
5. Align CTE programs with real-world skills and in-demand career pathways.
6. Promote equity and access to CTE pathways for all students, regardless of economic, academic status, or geographic location.


**YouTube channel**: A central hub for Cooperative Education Services (CES) to host video content related to Career and Technical Education (CTE), events, and outreach. It can be viewed here: https://www.youtube.com/@CESNewMexico.

# III. RURAL ALLIANCE FOR CAREER TECHNICAL EDUCATION

The Rural Alliance for Career Technical Education, established in January 2025, comprises approximately 20 rural school districts dedicated to enhancing career and technical education (CTE) opportunities. The Alliance has developed a Strategic Plan, including:

**Vision:** To connect rural New Mexico communities with innovative career technical education opportunities, expanding access and equity to meet diverse learning needs, drive economic growth, and increase graduation rates.

**Mission:** The Rural CTE Alliance expands access to innovative career technical education through strategic collaboration and a commitment to equity. We champion the learner voice, providing relevant training and recruiting opportunities from Pre-K through the workforce. We create a sustainable system that connects individuals to local and state employment and drives economic growth in rural New Mexico.

**Core Values:**

- Creating Opportunities: Driven by a mission to create opportunities for students and communities.
- Creative Solutions: Embracing flexible problem-solving and program development approaches.
- Sustainable Impact: Committed to long-term positive impact.
- Ensuring Equity: Committed to equitable access for all students.
- Celebrating Diversity: Fostering inclusivity and belonging by celebrating community diversity and culture.

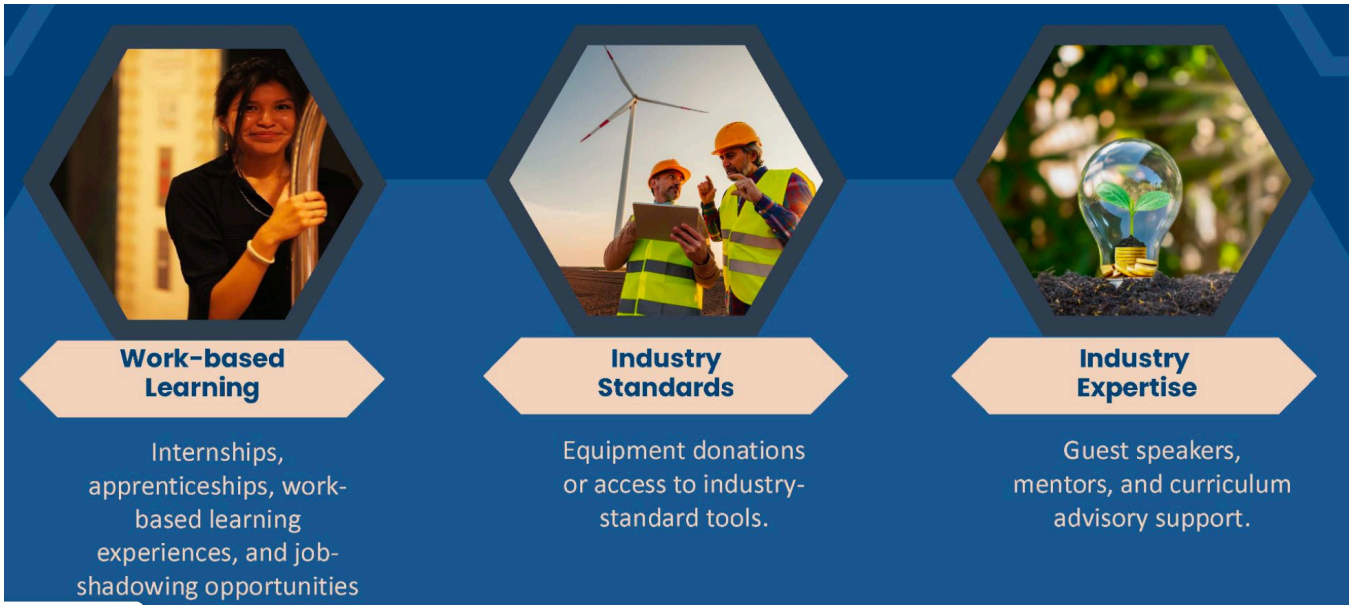
**Strategic Goals (Over the next three years):**

**Goal 1:** Increase the number of strong, active industry partners by 5% annually, engaged in the CTE system and willing to apply innovative strategies for rural communities.
**Goal 2:** Share resources and expertise by expanding access to high-quality career-connected learning experiences for rural New Mexico students by 5% annually.
**Goal 3:** Develop and deliver relevant and applicable professional development opportunities by 5% annually for district educators to enhance CTE instruction, program effectiveness, and student outcomes.

# IV. DEFINING CAREER TECHNICAL EDUCATION

The conference provided a foundational understanding of CTE:

- New Mexico Definition (NMAC 6.29.1.7.D): CTE means organized programs offering a sequence of courses, including technical and applied technology education, preparing individuals for paid or unpaid employment in current or emerging occupations requiring an industry-recognized credential, certificate, or degree.
- Federal Perkins Definition (Sec 3(5)(A-D)): CTE involves organized educational activities that offer a sequence of courses, integrate academic standards, provide technical skill proficiency (leading to a credential/degree), include competency-based applied learning (including entrepreneurship), and coordinate between secondary and post-secondary education. It may also include career exploration as early as middle grades.
- Distinctions: CTE teaches specific knowledge and skills aligned with career clusters, leading to an industry-recognized credential (a minimum of a 2-course "concentrator" sequence), which distinguishes it from broader electives, life skills courses, or general career-connected learning.
- NM Perkins V State Plan 2024-2028: A CTE Program of Study (POS) is defined as a three-course sequence starting in high school, extending into postsecondary education, and leading to industry-recognized certificates, credentials, or degrees.



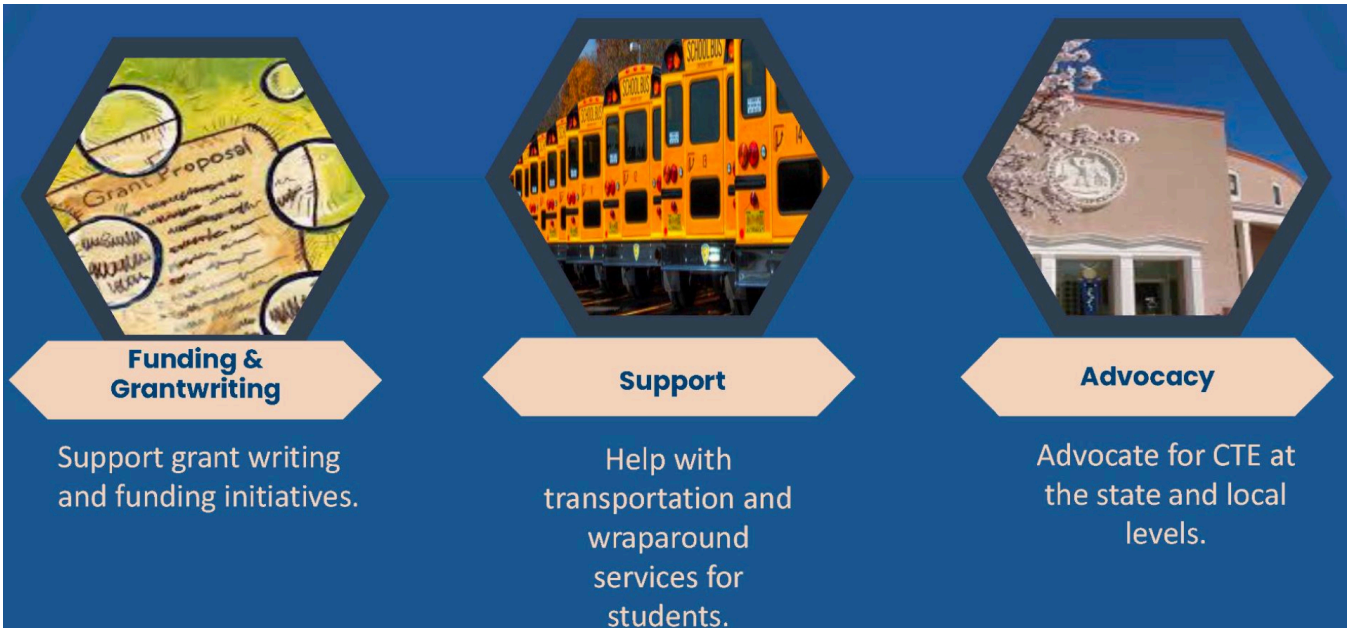
**Industry Partners**

# V. WHY CTE WORKS

**CTE demonstrates significant benefits for students and the workforce:**

- **Student Engagement & Completion:** CTE engages students and prepares them for fulfilling careers in vital, in-demand industries. High school CTE concentrators have an average graduation rate of 96% compared to the national rate of 85%.
- **Employment & Earnings:** CTE concentrators are more likely to be employed full-time and have higher median annual earnings 8 years after graduation.
- **Bridging the Skills Gap:** Despite millions of job openings, 74% of employers report a persistent mismatch between needed skills and worker qualifications. CTE directly addresses this.
- **Credentialing Importance:** An increasing number of job postings (about 1/3 in 2022) ask for short-term credentials.
- **Job vs. Career Distinction:** CTE connects students to long-term "careers" that offer growth, specialized skill development, and stability, as opposed to short-term “jobs."

**Community Organizations and Local Government**



# VI. HIGH-QUALITY CTE FRAMEWORK

**A high-quality CTE program adheres to several critical components:**

**Industry Standards Aligned and Integrated Curriculum:** Based on industry-validated technical standards, integrated with core academic subjects, incorporating employability skills, and developed with employer input.

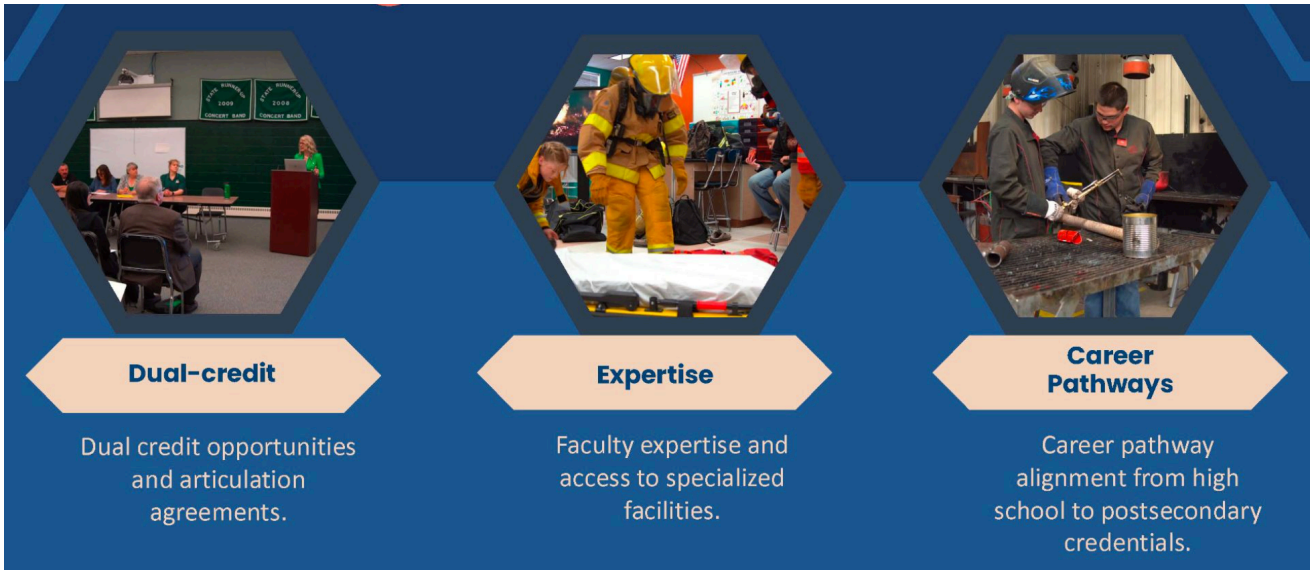
**Sequencing and Articulation:** Programs of Study (POS) comprise a non-duplicative course sequence that progresses from foundational to specific knowledge, culminating in industry-recognized credentials, facilitated through collaboration among secondary, postsecondary, and workforce staff.

**Assessment:** Integrates formative and summative assessments aligned to standards, using varied methods (including performance-based) to measure attainment of technical, academic, and employability skills.

**Prepared and Effective Program Staff:** CTE staff meet certification/licensing requirements, maintain up-to-date industry and pedagogical knowledge through ongoing professional development, and collaborate regularly with academic staff.

**Engaging Instruction:** Driven by content standards, incorporates project-based learning, applies knowledge in authentic scenarios, emphasizes academic-technical connections, uses relevant equipment/technology, and provides flexible, differentiated instruction.

**Partnerships with Higher Education Institutions:** Development of signed agreements with two- and four-year colleges and universities.



# VI. HIGH-QUALITY CTE FRAMEWORK (PART 2)

**Access and Equity:** Promotes POS to all participants without bias, actively recruits from underrepresented populations, offers unbiased career guidance, ensures equitable access to facilities/equipment, and provides supportive services to eliminate barriers for all students.

**Facilities, Equipment, Technology, and Materials:** Reflect current workplace practices, align with industry standards, meet safety requirements, and have defined processes for regular inspection, updates, and replacement.

**Business and Community Partnerships:** Actively develops partnerships through outreach and formalized approaches (e.g., advisory boards) to ensure POS meet workforce demands, validate curriculum, provide work-based learning, and offer financial/advocacy support.

**Career Technical Student Organizations (CTSOs):** Integral intra-curricular components that provide opportunities for technical, academic, and employability skill development, industry interaction, competitive events, and leadership.

**Work-Based Learning (WBL):** A full continuum of progressive WBL experiences accessible to all students, intentionally aligned with POS and career goals, with meaningful interaction with business professionals, precise requirements, and supervision.

**Data and Program Improvement:** Utilizes timely and accurate data collection for program improvement, labor market information for decision-making, and has formal processes for continuous data use, including addressing equity gaps.

**Career Clusters and Student Career Development:** Coordinates comprehensive career development, with personalized multi-year plans, accurate information on extended learning, labor market data, and job search.

# VII. FUNDING OPPORTUNITIES FOR CTE

The Legislature supports CTE programs in New Mexico schools through the NMPED College and Career Readiness Bureau:

- **Carl D. Perkins Federal Grant:** Provides federal funding to states for secondary and postsecondary CTE. Sub-awards to LEAs are based on a federal formula, with a minimum of $15,000 for secondary programs. Programs must align with state, regional, and local priorities identified through a Comprehensive Local Needs Assessment (CLNA), with the next CLNA meeting scheduled for 2026.
- **Next Gen CTE Funding:** A state legislative appropriation (HB 171, 2019) establishing a 7-year pilot, expiring June 2026. Awards vary by year, with a minimum of approximately $78,000 per district for 2024-2025. 50% of the allocation must align with identified priorities, while up to 50% can support non-priority POS, career exploration, CTSOs, or dual credit supports.
- **Direct Legislative Appropriations:** Money earmarked by the state legislature for career technical education programs, equipment, and facilities. These are distinct from the general operating budget allocated to public schools and higher education through the primary General Appropriation Act (often House Bill 2).

# VIII. INNOVATION ZONES (IZ)

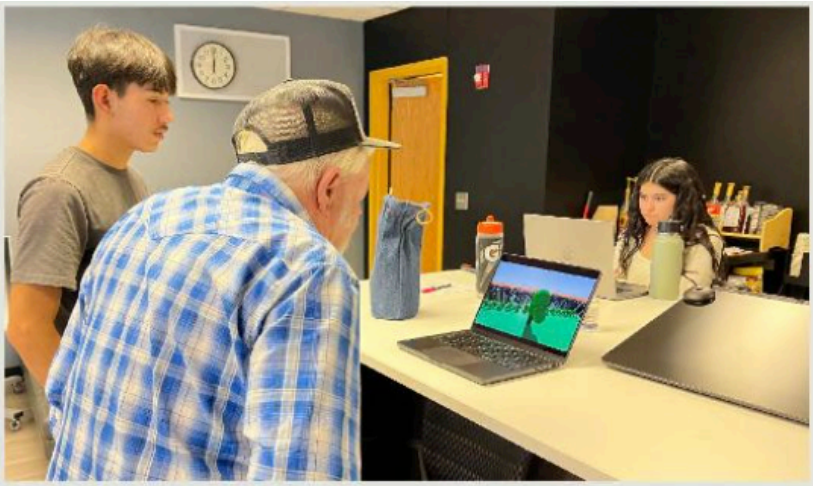
Innovation Zone (IZ) schools are a key initiative designed to reduce barriers to college and career readiness among historically underserved student populations. IZ sites systematically implement coordinated strategies, driven by a locally-created graduate profile, to:

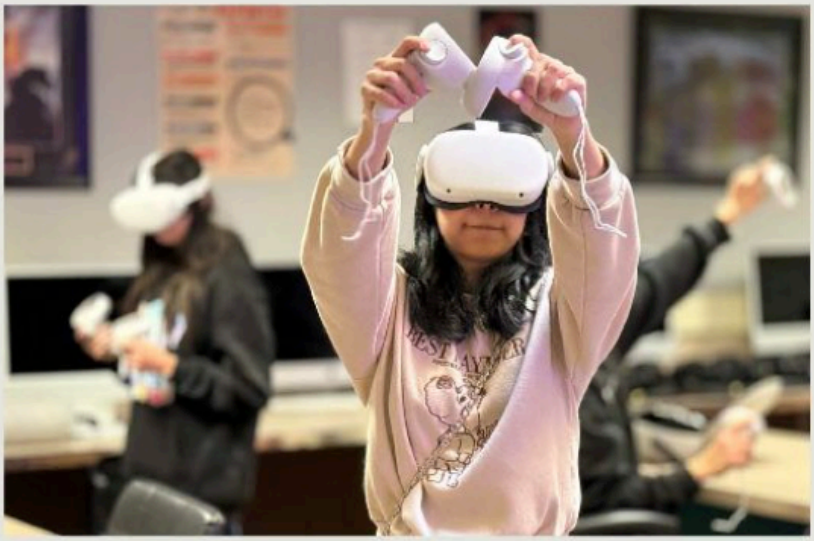
- Reduce gaps in graduation and attendance rates.
- Increase participation in work-based learning, community capstone projects, and Career and Technical Education (CTE) programs of study.
- An administrator from an IZ school states: "We facilitate real-life experiences outside the classroom, ensuring the educational journey honors (the students') diverse backgrounds while equipping them with practical, real-world skills."

# IX. HOW TO IMPLEMENT CTE PROGRAMS

A recommended framework for implementing CTE programs includes:

1. Articulate Your Purpose and Identify Career Programs of Study: Based on CLNA, Labor Market Information, and aligned with New Mexico Career Cluster Guide Approved Programs of Study (high-wage, high-skill, high-demand, and recognized credentials).
2. Evaluate Resources and Staffing: Assess needs for certified staff, career counselors, WBL coordinators, etc.
3. Seek Funding and Build Partnerships: Engage industry partners in the community, region, and state.
4. Develop Curriculum and Instruction: Align with industry standards and implement Career Technical Student Organizations (CTSOs).





5. Provide Professional Development.
6. Implement Work-Based Learning.
7. Evaluate and Improve.

# X. WORKFORCE & DATA NEEDS IN NEW MEXICO

Insights from the Department of Workforce Solutions highlighted key labor market trends:

- Low Labor Force Participation: New Mexico's labor force participation rate remains low compared to the U.S. average (e.g., April 2025 data shows NM at ~56.4% vs. the U.S. at ~62.7%).
- Employment Gap: As of April 2025, New Mexico had an estimated employment gap of 12,594, indicating that many job openings could not be filled even if all unemployed individuals were able to find employment. Nonfarm employment was 898,500.
- STEM Employment:
    - New Mexico has 59,160 STEM jobs, with an average wage of $108,650, which is significantly higher than the average wage for non-STEM employment ($53,670). This compares favorably to states like Nevada (58,000 STEM jobs, with an average salary of $93,340) and Arizona (214,390 STEM jobs, with an average salary of $106,260).
    - The annual median wage for STEM occupations in 2023 was $76,710, over 63% higher than that of non-STEM occupations ($46,830).

STEM Talent Retention: New Mexico higher education institutions produce around 2,600 STEM graduates each year, yet the state has an estimated 4,600 high-tech job openings at any given time. New Mexico hires a lower percentage of STEM graduates from its institutions than the national average.

Strategies to keep NM students in NM STEM careers:

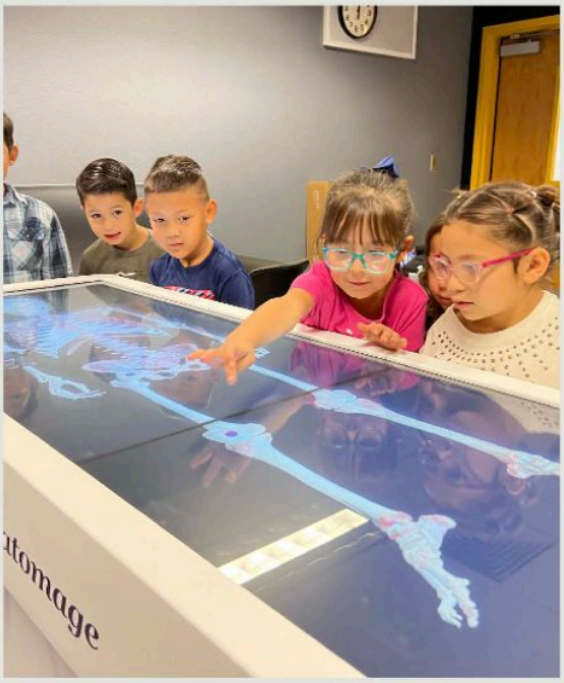
- Stronger partnerships between workforce systems, employers, and work-based learning programs.
- Better communication between all WBL and internship programs.

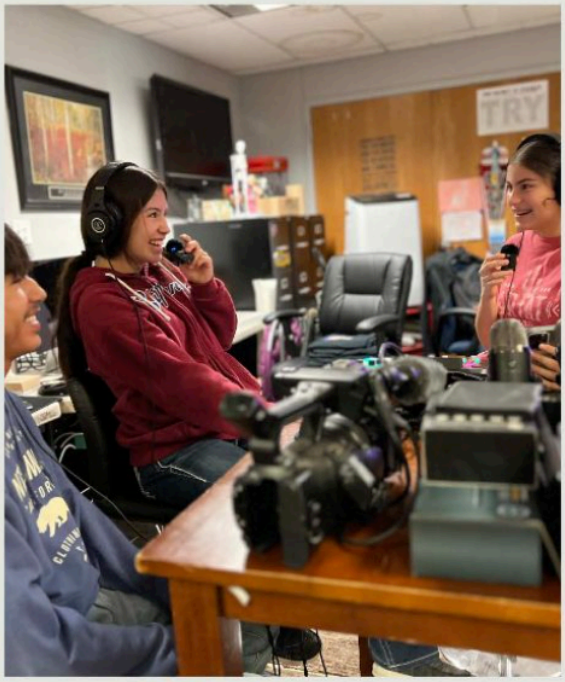
The Department of Workforce Solutions (DWS) offers support through WorkKeys skill assessments, career counseling (with over 90 counselors across 24 statewide locations), and facilitating employer engagement.

# XI. STUDENT VOICES

At the heart of the Rural CTE Alliance for Our Future Workforce conference was a powerful student panel—an opportunity to hear directly from the individuals who matter most. These high school students shared personal stories about how Career Technical Education (CTE) has shaped their academic journey, sparked their career interests, and kept them engaged in school. **Click here** to see a 24-minute moving conversation that captures the impact of CTE programs in rural New Mexico—straight from the students who are living it.  In summary:

- CTE motivates students to attend and stay in school, making the "real world" less intimidating.
- "Traditional" learning doesn't work for everyone; CTE offers personalized, hands-on learning.
- CTE helps students see connections between academic classes and the real world.
- Students develop both hard skills and essential soft skills (communication, confidence).
- Teachers are often seen as "professionals" who are passionate about their fields.





The student panel highlighted several compelling themes regarding the impact of Career Technical Education (CTE) programs, particularly in rural New Mexico high schools. These themes underscore the vital role CTE plays in student development, engagement, and future readiness.

## 1. CTE as a Catalyst for Engagement and Attendance

A prominent theme is how CTE programs, especially internships, significantly *boost student motivation for school attendance and engagement*. Several students explicitly stated that CTE courses motivated them *to at*tend school. For one student, the internship program helped her overcome a challenging period with her mental health, providing a compelling reason to attend and discover a career path. The panel's unanimous show of hands and observations about peers confirm that hands-on, real-world learning experiences directly translate into increased enthusiasm for education, ultimately impacting attendance rates.

## 2. Career Exploration and Pathway Clarity

The panel emphasized CTE's crucial role in *helping students explore diverse career fields and gain clarity on their post-secondary pathways*. Students spoke about discovering passions they never knew they had (e.g., switching from hospital work to business, or finding an interest in social work after initially pursuing forensic science). CTE provides practical skills and knowledge that directly translate into college courses and future careers, making students feel "so much more ready" for their chosen fields, from cardiology to clinical psychology. This direct connection to future opportunities is invaluable for students who may otherwise feel lost about their direction.

## 3. Practical Skill Development and Real-World Application

A third key theme is the focus on *developing practical, transferable skills and applying classroom learning in real-world settings*. Internships, in particular, were highlighted for teaching essential professional skills, such as note-taking, documentation, and communication. Students appreciate the "hands-on" experience and the ability to immediately "put our skills to use" in professional environments, even earning a wage as a bonus. This practical application bridges the gap between theoretical knowledge and vocational readiness, preparing students for the demands of the workforce immediately after high school or for further specialized education.

# XII. CASE STUDY: EMPOWERING ELEMENTARY AND MIDDLE SCHOOL STUDENTS THROUGH STEM AND CAREER READINESS (BERNALILLO PUBLIC SCHOOLS)

Bernalillo Public Schools (BPS) presented its instructional vision:
"Students are immersed in engaging, culturally-sustaining, and meaningful, grade-level work in every class, every day... Teachers intentionally use each minute... to maximize learning, nurture curiosity, and make connections to our community and world."

**Guiding Principles:**

- Responsibility for students' economic mobility.
- Potential is uniformly distributed; opportunity is not.
- Civic covenant to ensure equal opportunity.
- Student outcomes won't change until adult behaviors change.

**BPS CTE Offerings:**

- High School: Agriculture, Auto, Biomedical, Residential Construction, Topics in Electricity, Welding. Computer Science (SY 25-26) and Education (hold 25-26) are planned.
- Middle Schools (Spartan Learning Academy, Santo Domingo, Cochiti): Fabrication (Fab) Lab, Construction Exploration, CAD Drafting, Computer Science Programming, Intro to Agriculture, Medical Detectives (PLTW), Anatomage Table.
- Elementary Schools: Launching STEM Specials in SY 2025-2026, training STEM Specials Teachers. Incorporating PLTW Launch Modules aligned with HQIM and BPS pathways and using Z-space Computers, Robo Wunderkind (coding), Lego Education, and Beable Education (literacy/career).
- S.P.A.R.K. (Summer Playshops Applying Robotics for Kids): Broadens opportunities, introduces robotics, and incorporates broader STEM components aligned with HQIM and Career Pathways.

# XIII. KEY INSIGHTS FROM ATTENDEES

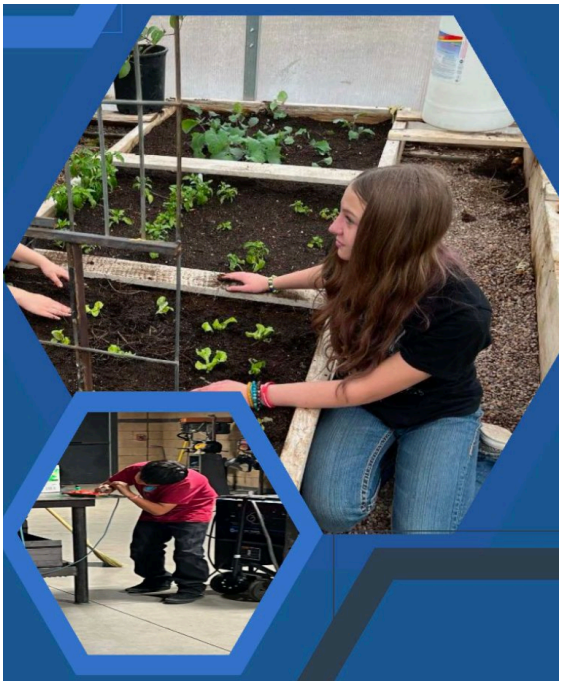
The Think Tank fostered dynamic discussions, revealing shared challenges and innovative solutions.

## Challenges and Questions Raised:

- **Equity & Access:** What does true alignment to high-needs communities look like? How to ensure inter-district equity, especially for rural areas?
- **Systemic Collaboration:** How to create a comprehensive system of collaboration? How can districts work together to create CTE synergy?
- **Industry Involvement:** How to get more businesses and industry involved in providing internships and improving student experiences, especially for small, rural schools.
- **Program Sustainability:** How to keep CTE programs current and evolving, acknowledging that the person leading the program often makes all the difference.
- **Student Engagement & Passion:** How to keep the "love of learning alive" and help students see that passion is more important than money.
- **Teacher Support & Resources:** How to provide CTE teachers with adequate space, time, resources, and professional development to teach their trade and grow.
- **Funding & Advanced Programming:** How to continue offering advanced programming while leveraging funds for other educational requirements.
- **Transportation:** How to provide transportation for rural and remote students to access camps, internships, and lab opportunities.
- **Policy Alignment:** What policy levers can align local, state, and federal requirements for credentialing in K-12 and higher education?
- **Industry-Education Communication:** Need for a common language between industry and education, and constant communication due to rapid industry changes. Externships for CTE teachers are crucial.
- **Measuring Effectiveness:** How to evaluate effectiveness beyond just enrollment and “completers.”

# XIV. RECOMMENDATIONS AND PROPOSED SOLUTIONS

- **Legislative Action:** Craft a legislative bill that empowers CTE programs and incentivizes companies to provide funding (beyond state funds) for real-time technology, replicas, and teacher training.
- **Mapping Pathways:** Local Education Agencies (LEAs) could develop mapping and sequential pathways to illustrate the scaffolded steps required to earn certifications and credentials statewide within Career and Technical Education (CTE) programs.
- **Professional Development & Networking:** Need for PD and networking opportunities among CTE instructors statewide, cross-content exposure, and educating staff/ community stakeholders on CTE needs.
- **Parent Education:** Share with parents opportunities post-high school outside of traditional 4-year academic study.
- **Funding Models:** Advocate for additional funding regardless of school size. Explore funding partnerships for new statewide and regional initiatives.
- **Regional Support Systems:** Establish clear regional support systems. Regional approaches are vital for rural areas, potentially with a post-secondary "HUB" (while ensuring districts don't lose funding).
- **Industry Needs:** The industry seeks a greater emphasis on general skills and proficiency in math backgrounds in high school, rather than a focus on highly technical skills.
- **State-Level Initiatives:** Consider Career and Technical Education (CTE) Signing Day for students. Develop regional professional development initiatives in collaboration with industry partners. Implement Mobile Labs with instructors in each CTE Region.



# XIV. RECOMMENDATIONS AND PROPOSED SOLUTIONS (PART 2)

- **More Flexible Solutions**: Advocate for flexible certification/licensure pathways and creative solutions for staffing and scheduling CTE courses.
- **Collaboration:** Align the Department of Education and the Department of Labor. Establish a common language between Industry and Education. Emphasize integrated, cross-curricular academic learning.
- **Data & Evaluation:** Evaluate effectiveness beyond just enrollment and completers. Rethink "completers" as part of a continuum. Use data for continuous program improvement and address equity gaps.
- **Partnerships & Funding:** Establish multi-year funding for program growth. Create shared alum databases for mentorship. Advocate for the BECCA program (apprenticeship/pre-apprenticeship, wraparound services). Foundations and partners can support CTSOs. The Youth Fund is a model for pooled funding (15 $100,000 grants available this year) and can help as a resource hub for coordination.
- **Financial Incentives:** Foundations and business partners could support differential pay for instructors.
- **Early Exposure:** Begin CTE synergy in elementary and middle school.
- **Rethink Education:** Reimagine and redesign the high school experience with new graduation requirements. View CTE not as a silo but integral to the education ecosystem.

# XV. CONCLUSION

The Alliance for Our Future Workforce's CTE Think Tank played a crucial role in understanding the landscape of Career and Technical Education (CTE) in New Mexico, particularly for rural schools.

The discussions affirmed the profound impact of CTE on student engagement, career readiness, and economic vitality. While challenges such as funding, faculty, access, teacher support, and consistent industry engagement persist, the conference generated a wealth of innovative solutions and a clear call for collective action.

By fostering stronger partnerships, embracing flexible and culturally responsive approaches, leveraging data for continuous improvement, and advocating for supportive policies, New Mexico can build a robust Career and Technical Education (CTE) system that ensures all students are prepared for high-skill, high-wage careers and contribute to their communities' economic growth.