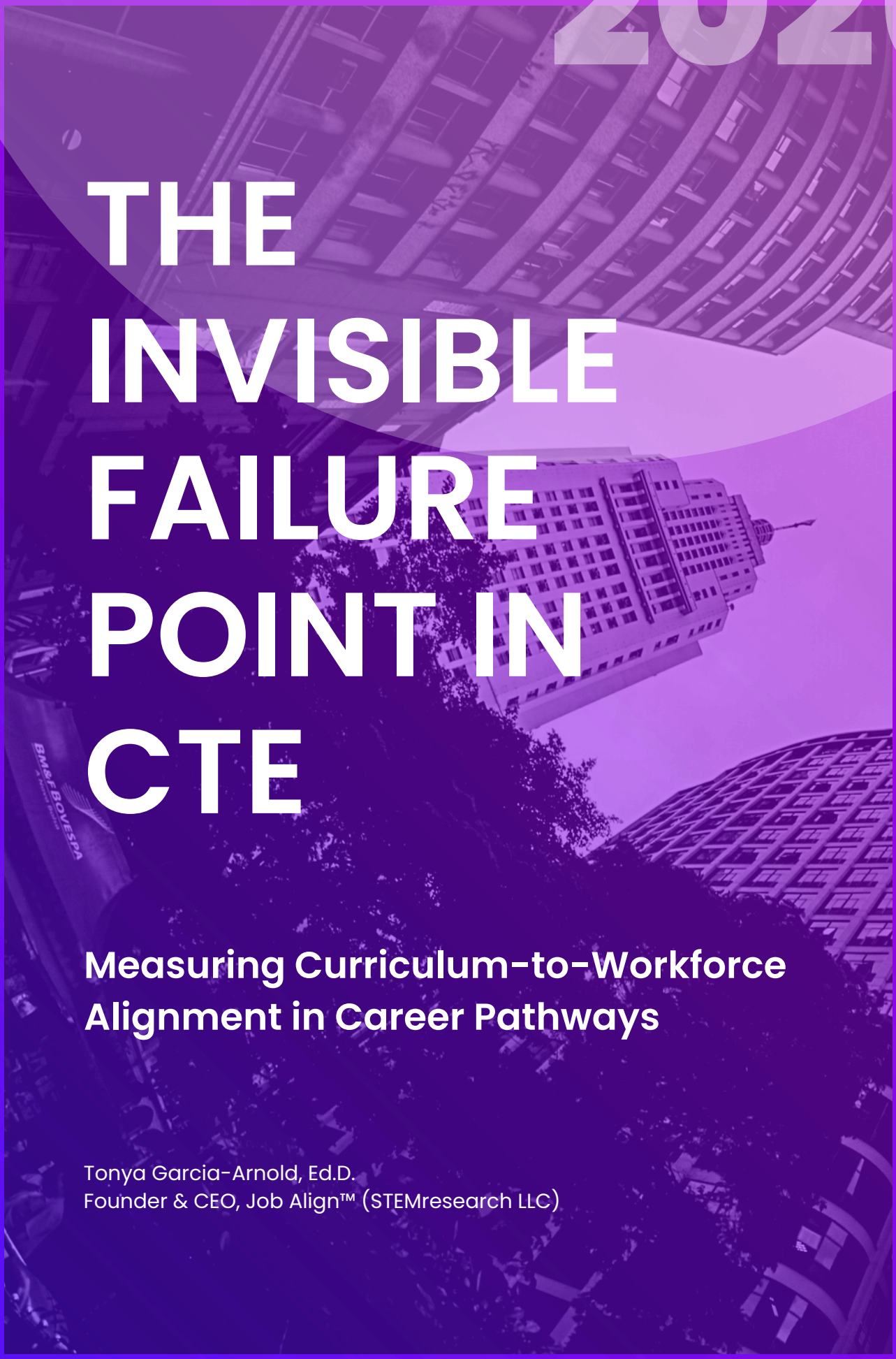
2026

THE INVISIBLE FAILURE POINT IN CTE



Measuring Curriculum-to-Workforce Alignment in Career Pathways

Tonya Garcia-Arnold, Ed.D.
Founder & CEO, Job Align™ (STEMresearch LLC)

A Research Whitepaper | Job Align™

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Executive Summary

Career and Technical Education (CTE) programs are expected—by statute, policy, and public trust—to prepare learners for workforce participation. Federal law under the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) emphasizes alignment between CTE programs of study and labor market needs, continuous improvement, and program quality (Congressional Research Service, 2022).

Despite this emphasis, alignment between the curriculum and workforce competency requirements is rarely measured systematically or repeatedly. Most accountability systems focus on enrollment, completion, and credential attainment—important indicators that nevertheless fail to verify whether students are developing the competencies required for entry-level employment.

This whitepaper identifies curriculum-to-workforce misalignment as an invisible but systemic failure point in modern CTE implementation, particularly as districts expand online and third-party instructional models. It introduces Job Align™, a diagnostic framework designed to make alignment measurable, visible, and actionable at the system level—without replacing curriculum, instruction, or credentials.

PART 1: The Alignment Gap

Alignment as an Assumption

Alignment between CTE curriculum and workforce demand is widely assumed but rarely verified. Program approval, credential inclusion, and advisory committee participation are often treated as proxies for alignment. While these elements contribute valuable input, they do not independently confirm that instructional content reflects the knowledge, skills, and abilities required in real

> ***"Alignment is often assumed rather than measured."***

Perkins V explicitly requires that local recipients align programs of study with state or regional labor market needs and engage in continuous improvement informed by data (Congressional Research Service, 2022). The Comprehensive Local Needs Assessment (CLNA) is intended to support this alignment by integrating labor market information, learner outcomes, and program offerings (Association for Career and Technical Education [ACTE], 2025). However, Perkins V does not prescribe a standardized method for measuring curriculum-to-workforce alignment, resulting in significant variation in practice.

Empirical Evidence of Misalignment

Research has demonstrated that alignment between CTE course-taking and local labor market opportunity varies by region and field, indicating that alignment cannot be presumed (Sublett, 2019). Texas-specific guidance further cautions districts against relying on single occupations or credentials when making program decisions, emphasizing the use of labor market information to support coherent pathways (Texas Education Agency, 2024).

Doctoral research examining Texas CTE STEM academic standards and STEM job descriptors identified measurable gaps between instructional expectations and workforce competency requirements, reinforcing the need for structured alignment analysis (Garcia-Arnold, 2017).

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PART 2: Measuring Curriculum-to-Workforce Alignment

Defining Curriculum-to-Workforce Alignment

For workforce readiness, alignment refers to the extent to which curriculum content and learning outcomes align with the competencies required for entry-level occupations in a regional labor market. Misalignment may occur when:

- Essential job competencies are absent or underrepresented
- Instructional emphasis does not reflect task importance or frequency
- Credentials signal readiness without verifying skill coverage
- Program design weakly reflects regional labor demand

These conditions are structural rather than instructional and reflect system-level design decisions.

Framework Foundations

Job Align™ applies a structured diagnostic approach that examines relationships between:

- Program and course learning outcomes
- Recognized occupational competency frameworks
- Regional labor market indicators

The framework draws on established occupational classification systems, including competency-based descriptors such as those maintained through the U.S. Department of Labor's O*NET system, which documents occupational knowledge, skills, abilities, tasks, and work activities (U.S. Department of Labor, n.d.).

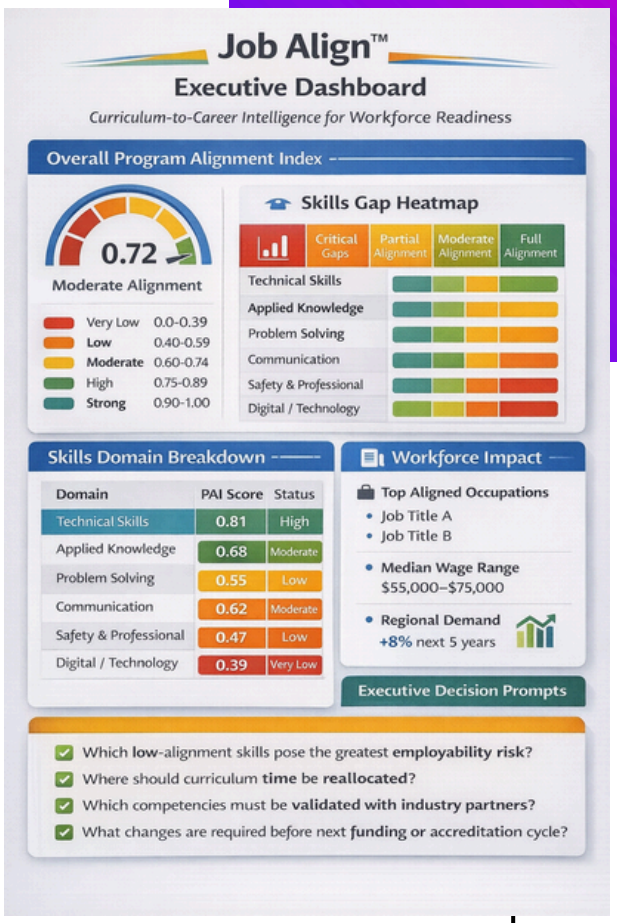
Job Align™ is intentionally diagnostic, not evaluative. It does not assess individual educators, student performance, or instructional delivery. Instead, it provides leadership-level insight into alignment patterns across programs of study, supporting governance and improvement decisions.

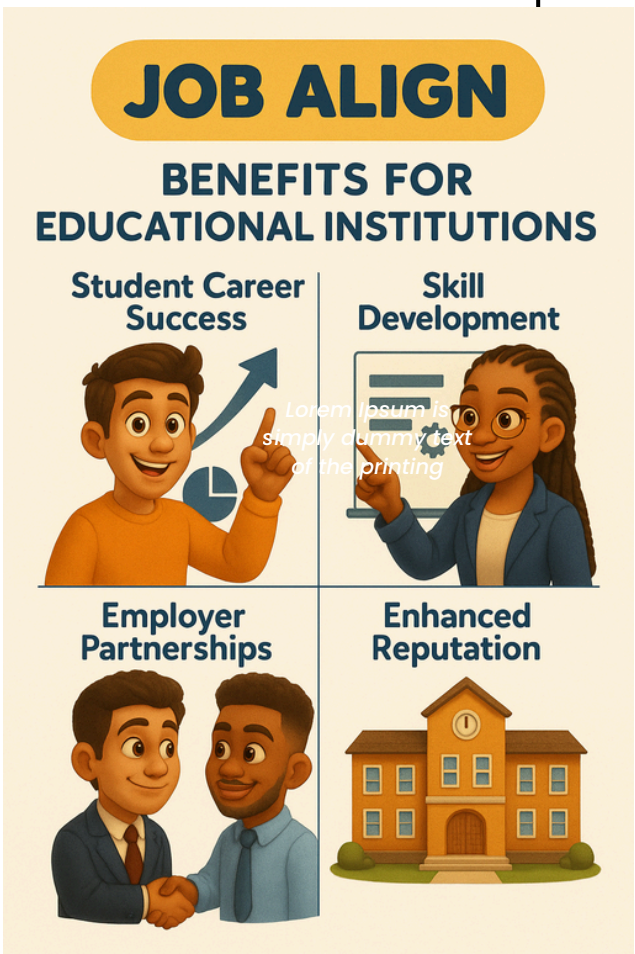
This diagnostic framing is directly informed by doctoral research that systematically compared Texas CTE STEM academic standards with STEM job descriptors, highlighting the need for repeatable program-level alignment tools (Garcia-Arnold, 2017).

"Credential attainment alone does not verify workforce readiness."

Framework & Evidence Page

"Illustrative Alignment Concept (Not Program Data)"





Online CTE, Credentials, and Workforce Risk

Online and Outsourced CTE

Online and third-party CTE delivery models have expanded rapidly, offering flexibility and access. Research on online CTE implementation during and after the COVID-19 pandemic identifies benefits alongside challenges related to learner readiness, hands-on skill development, and instructional design (Briggs et al., 2021). State-level analyses further emphasize the importance of deliberate alignment to industry standards to support quality outcomes in online CTE environments (Michigan Virtual, 2023).

As instructional distance increases, districts may have reduced visibility into competency coverage, elevating alignment risk if no diagnostic mechanism exists.

Credentials and Workforce Outcomes

Credential attainment is frequently used as evidence of workforce readiness. However, large-scale labor market analyses demonstrate that outcomes associated with nondegree credentials vary widely, and only a subset are consistently linked to wage gains (Burning Glass Institute, 2025). Workforce research on middle-skills pathways shows strong demand and opportunity in certain sectors while underscoring the importance of program relevance and alignment (Georgetown University Center on Education and the Workforce, 2024). These findings reinforce that credentials alone are insufficient indicators of workforce readiness without validation of underlying competency alignment.

PART 3: Governance, Equity, and Continuos Improvement

Supporting Perkins V Intent

Job Align™ supports Perkins V requirements related to alignment, program quality, and continuous improvement by providing a structured, evidence-based diagnostic that districts can use within CLNA processes and program review cycles (ACTE, 2025; Texas Education Agency, 2024).

Equity Implications

Misalignment disproportionately affects learners who rely on CTE pathways as primary routes to economic mobility. When programs promise workforce readiness but deliver weak alignment, students face increased risk of underpreparedness for entry-level roles (Garcia-Arnold, 2017). Measuring alignment is therefore both a quality assurance and equity strategy.

> **Alignment should not be presumed.**
> **It should be demonstrated.**

Conclusion

CTE programs do not fail because students cannot learn. They fail when systems do not verify whether learning aligns to the realities of work.
As online and outsourced instructional models continue to expand, districts require tools that move alignment from assumption to assurance. Job Align™ provides a pragmatic, research-grounded approach to diagnosing curriculum-to-workforce alignment in support of Perkins V intent, continuous improvement, and workforce readiness.
Alignment should not be presumed.
It should be demonstrated.

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ANNOTATED BIBLIOGRAPHY (APPENDIX A)

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