



RESEARCH GROUP

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Rebalancing Arizona’s Education-to-Workforce Pipeline:

A 25-Year Strategic Framework

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Arizona stands at a pivotal economic moment. Historic investment in semiconductors, advanced manufacturing, mining, aerospace, and energy is reshaping the state’s long-term trajectory. Canadian and international firms evaluating Arizona consistently focus on three variables: water security, energy reliability, and workforce availability. While water and energy infrastructure dominate public discourse, workforce development represents the most decisive long-term constraint on sustainable growth. Without structural alignment between education and projected industrial demand, Arizona risks limiting its own economic expansion over the next 25 years.

The most critical intervention begins in K–12 education. Arizona ranks near the bottom nationally in several performance metrics, but the deeper challenge is pathway clarity. For decades, the dominant narrative has framed a four-year college degree as the primary post-secondary measure of success. While higher education is essential, this singular emphasis has created

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structural imbalance, leaving skilled trades and mid-tier technical professions chronically understaffed. Rising student debt, degree underemployment, and persistent technical workforce shortages are all symptoms of this misalignment.

Many high school students disengage not due to lack of ability, but because they cannot see a tangible connection between education and meaningful work. When the only “respectable” outcome appears to be a four-year degree—financially daunting or personally misaligned—disengagement becomes a rational response. This is not a failure of ambition; it is a structural failure to provide diversified, attainable, and respected pathways early in development at scale. When education is linked to real careers, purpose returns.

Countries such as Germany normalize both academic and technical pathways during lower secondary education. Arizona can adopt this principle by introducing structured career literacy and aptitude exploration in grades five or six, providing early exposure to multiple viable futures before disengagement occurs. By grade nine, students should have access to integrated academic and career-technical models that allow them to graduate with both a high school diploma and industry-recognized credentials. Apprenticeships, dual enrollment, stackable certifications, and industry partnerships would create relevance, strengthen graduation rates, and build workforce readiness. When students see that remaining in school can lead directly to careers as welders, automation technicians, heavy equipment operators, coders, or industrial/ aviation, aerospace, mechanics, persistence increases. Early pathway architecture expands choice rather than limiting it.

To guide these interventions, the Canada Arizona Business Council (CABC) is encouraging a research initiative producing a 25-year workforce forecast starting with Southern Arizona. This analysis would integrate projected industry growth, occupational demand by skill, graduation rates, program completion, and institutional capacity. The research will quantify workforce gaps, inform program development, and provide evidence to attract private-sector investment—allowing companies to engage meaningfully in workforce partnerships without waiting for state funding.

Private-sector engagement is essential. Companies benefit from a reliable talent pipeline, and early investment in workforce development accelerates ROI on capital projects. Incentives, co-investment frameworks, and partnerships can enable businesses to actively participate in apprenticeship programs, dual-enrollment initiatives, and community college collaborations. These efforts will strengthen retention, restore dignity to skilled trades, and ensure students complete industry credentials alongside their high school diplomas.

Universities remain central to innovation and research. Engineers, scientists, physicians, and researchers are indispensable. Yet, enrollment often exceeds labor-market demand in some fields, while high-growth industries struggle to fill technical roles. Semiconductor and advanced manufacturing expansion requires layered workforce capacity: engineers design systems, but technicians and tradespeople operate, maintain, and optimize them. Redirecting roughly 20 percent of university-bound students toward applied two-year degrees and technical certifications would better match workforce demand, reduce student debt, and

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strengthen economic resilience.

Trade schools, apprenticeships, and community colleges provide the fastest mechanism to address immediate workforce shortages in welding, industrial mechanics, heavy equipment operation, construction, electrical systems, and process operations, as well as all new AI enabled career paths in a Coordinated statewide strategy, that will produce measurable, sustainable outcomes. Early career literacy, industry-aligned curriculum, and private-sector partnerships will increase graduation rates, close workforce gaps, and ensure economic growth is supported by the necessary talent pipeline.

The strategic risk of inaction is clear. Without coordinated reform, Arizona will face escalating skilled labor shortages, slowing growth despite capital investment, and rising student debt while mid-skill job vacancies remain unfilled. Conversely, data-driven investment in the broader education-to-workforce ecosystem will yield measurable gains: higher graduation rates, reduced debt exposure, improved industry alignment, and strengthened economic competitiveness. Workforce self-sufficiency will become a defining advantage of Arizona's industrial strategy.

Arizona possesses momentum, capital inflows, and institutional infrastructure. What remains absent is a coordinated 25-year architecture linking education and workforce outcomes. By leveraging CABC-led research and engaging private-sector partners, Arizona can restore balance across the system, reduce student disengagement, strengthen graduation outcomes, and ensure economic growth is matched by workforce readiness. The decisions made in the next decade will determine whether Arizona becomes a national model for integrated workforce strategy—or confronts preventable constraints on its own success.