ADDRESSING THE SKILLS GAP: A MARKET-BASED APPROACH FOR COLORADO

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KEY POINTS

- Colorado has experienced a skilled labor shortage for years, but the COVID-19 pandemic further exposed the underlying problems in the workforce. The state has a high percentage of workers who are particularly vulnerable to forced closures compared with other states, yet those workers tend to lack the skills necessary to fill more secure, in-demand jobs in industries seeking skilled laborers.

- The federal government and states have been involved in promoting vocational and workforce training for over a century and have gradually but extensively expanded the reach of its policies during that time.

- Despite government intervention, Colorado still suffers from a severe skilled labor shortage in many industries.

- The state and NGOs have produced countless resources to identify skills gaps in the state, but these cannot capture the full picture and are thus insufficient tools for developing solutions.

- Because central planners will always fall short of the knowledge necessary to engineer the labor market properly, all public policy intended to address the labor needs of the economy must rely instead on free market principles.

- Any government policies intended to address the skills gap must follow three tenets:

  1. Market forces rather than central planning must drive solutions.
  2. Any public funding must be tied to no more than two simple, specific, and easily measurable outcomes.
  3. Government programs and incentives cannot be so overly cumbersome or complex as to prevent widespread use by industry and/or laborers.

- An opportunity scholarship tax credit to incentivize the training of skilled laborers could serve as a possible solution to Colorado's skills gap which follow the three tenets.

INTRODUCTION

The global coronavirus pandemic exposed underlying vulnerabilities in the state's economy and the need for a better trained, more resilient labor force. Independence Institute Senior Fellow Dr. Paul Prentice investigated the impact of the state's public policy response to the pandemic and its impact on the local economy in a 2021 study entitled "Unequal Opportunities, Unequal Outcomes: The COVID-19 Recession in Colorado." He found that "job losses during the state's recession have been concentrated among workers with below-average incomes, while wealthier workers have been less affected."[1] The industry in which workers experienced the most job loss and sustained the highest level of unemployment was also that with the highest concentration of low-wage and low-skilled workers: leisure and hospitality.[2]

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This concentrated impact has had an outsized effect on Colorado because the state's economy boasts a relatively high number of such vulnerable jobs as a percentage of total jobs in the state. The Brookings Institution maintains an online tool that breaks down the number of vulnerable jobs in each state, defined as "jobs that pay low wages and do not provide benefits."[3] These jobs tend to require little training or specialized skills. According to Brookings, 21.4 percent of Colorado jobs fall under this category, making the state's labor force the 8th most vulnerable in the nation.[4] Citing the Brookings tool, the Colorado Workforce Development Council's (CWDC) "2020 Colorado Talent Pipeline Report" notes that "[t]he hospitality sector holds the highest share of vulnerable jobs in the state," echoing Independence Institute's findings.[5]

The state's pre- and post-pandemic unemployment numbers reflect these weaknesses. Prior to the pandemic, Colorado's unemployment stood at 2.8 percent (February 2020), outperforming the national average of 3.5 percent.[6] By November of 2021, however, the national average had fallen back down to 4.2 percent while Colorado's unemployment rate lagged at 5.1 percent.[7] While other factors such as public policies disfavoring job creation likely played a role in Colorado's poor employment performance, the higher-than-average percent of vulnerable jobs in the state, particularly in hospitality, has likely contributed to this disparate outcome for Colorado when compared with national trends. While the presence of so many low-skilled "vulnerable" jobs helps to explain why the pandemic hit Colorado's workforce especially hard, it fails to explain why so many Coloradans continue to rely on these vulnerable jobs and why the state's skilled labor shortage persists.

During the pandemic, thousands of vulnerable low-wage workers lost their jobs and could not fill the well-paying, in-demand positions identified by Independence Institute, CWDC, and others. Contrast these with higher-earning, skilled workers in careers such as health services, professional and businesses services, and trade, transportation, and utilities, in which Dr. Prentice found comparatively little short-term job loss and observed a much quicker recovery. Many of these less vulnerable, higher-wage jobs happen to be the very jobs with high levels of industry demand and an insufficient labor force to fill them. The Colorado economy has—and, based on current expectations, will continue to have—these types of well-paying, skilled jobs long into the future. To secure such a job, however, workers must often obtain additional schooling, training, credentials, or certifications.

Over a hundred years of government workforce development and vocational training programs have not erased this conundrum. That does not mean public policy cannot make a difference. Instead, it will require careful reflection on past policies.

HISTORY AND BACKGROUND ON WORKFORCE POLICY

Federal and state governments have been involved in vocational training for over century. In 1917, Congress passed the Smith-Hughes Act to provide for vocational education in agriculture, trade, industry, and home economics.[8] The bill had two broad goals: to provide Americans with economic opportunity and to ensure the nation maintained an adequate supply of trained labor.[9] This legislation remained the blueprint for the federal government's involvement in vocational education into the post-war era.

As the United States economy evolved into the 1950s and 60s, the federal government began to expand the reach of its vocational education programs. In response to the perceived threat of the Soviet Union's satellite *Sputnik and the space race, Congress passed the National Defense Education Act of 1958.*[10] The bill's findings and declaration of policy stated that "the security of the nation requires the fullest development of mental resources and technical skills of its young men and women."[11] The bill expanded the federal government's role in vocational training to include what we now commonly call STEM subjects: science, technology, engineering, and mathematics.

The Vocational Education Act of 1963 represented the first major shift since the Smith-Hughes Act in the federal government's approach to vocational education.[12] According to the Congressional Research Service, "The Act redirected vocational education programs from that of training specific categories such as agriculture, home economics, practical nursing, and fisheries to that of preparing all groups in the community regardless of their vocational emphasis or attachment to the labor force."[13] Vocational education programs under the act were defined as "organized courses of study which are directly related to the preparation of individuals for paid or unpaid employment."[14] Thus, during this time Congress expanded its interest in vocational education beyond its previous focus on select vocations to preparing Americans to fill needs across the entire economy.

In addition to vocational training, Congress has passed countless workforce development bills since the early 1960s to prepare individuals for the labor market. The programs aim to achieve more than just vocational training, but they share the broad goal of developing America's workforce to meet the needs of the modern economy. The federal government has been involved in workforce development separately from vocational education since the passage of the Manpower Development Training Act of 1962 (MDTA).[15] In subsequent years, a wide array of federal and state agencies established programs to increase access to job training and technical education. Today, many of these have culminated in the Workforce Investment and Opportunity Act (WIOA), though countless other state and federal programs exist independently of this act. In addition to providing skills, classroom instruction, or on-the-job training, these programs provide individuals with career counseling and job search assistance.

The various efforts by the federal government to train and develop America's workforce through vocational training and workforce development programs since Smith-Hughes have relied on federal, state, and local governments for implementation. Generally, Congress

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supplies funding via federal legislation to achieve a particular goal, and state and local governments administer those dollars within the framework designed by Congress. Therefore, most if not all federal legislation designed to create a properly trained and skilled workforce relies on non-federal entities for its administration.

Colorado has numerous state laws and programs independent of the federal government designed to advance vocational education and training and develop the state's workforce. These programs are administered across various state agencies. The Colorado Department of Labor and Employment (CDLE), the Colorado Department of Higher Education (CDHE), the Colorado Department of Education (CDE), the Colorado Community College System (CCCS), and the Colorado Workforce Development Center all play a major role in various vocational education and workforce development programs in the state. Several other agencies such as the Colorado Department of Agriculture and the Colorado Department of Human Services administer more narrowly tailored programs. The state also partners with industry and other non-governmental organizations (NGOs) to administer programs. Additionally, some state and federal programs rely heavily on local workforce centers for their administration. This paper does not explore every state program or the agencies behind them in depth, but it references several of them in later sections.

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COLORADO'S SKILLS GAP

Despite government efforts for over a century to close the skills gap in America's workforce and cultivate a labor force sufficient for a developing and evolving economy, skills gaps continue to yield labor shortages within Colorado's economy. This paper does not aim to fully dissect Colorado's economy and workforce.* Instead, this section provides a cursory look at where skills gaps might exist in Colorado to highlight the gravity of this issue and the need for policy solutions.†

Though the COVID-19 pandemic poignantly exposed preexisting weaknesses in Colorado's economy when thousands of low-wage, low-skilled workers lost their jobs, the state's skilled labor shortage, or the "skills gap," has been a persistent challenge for the state. A 2021 Independence Institute study, "The Colorado Skills Gap: Underlying Causes," identified key Colorado industries experiencing skilled labor shortages and attempted to explain some of the root causes.[16] By using an economic analysis known as a shift share analysis, the study identified industries in which skills gaps likely exist. The analysis compared employment in Colorado industries with that of other states and regions to pinpoint where Colorado diverges from others in employment.

* A later section of this paper entitled "The Knowledge Problem" explains why this paper does not take that approach. In addition, Independence Institute has already conducted such research, as have state agencies and other NGOs. Much of that research and work informed the content of this paper.

† For more on the skills gap in Colorado, see Independence Institute's 2021 study, "The Colorado Skills Gap: Underlying Causes," referenced in the next paragraph and later in this paper under "Tenets of Effective Workforce Development Policy" and also cited in the bibliography.

Where Colorado industries have grown more slowly than national or regional counterparts, a skills gap may be responsible. These industries include—

- Specialty Trade Contractors
- Manufacturing
- Publishing, Except Internet
- Finance and Insurance
- Professional, Scientific, and Technical Services
- Administrative and Support and Waste Management and Remediation Services
- Health Care and Social Assistance[17]

Growth in the Specialty Trade Contractors sector, for example, underperformed compared with neighboring states. The report suggests that a lack of adequate skilled labor may be stifling industry growth. Many of these jobs can pay well into six figures without the need for a bachelor's degree, though they often require additional training or certification. United States Department of Labor data show that the construction industry had about ten times more active apprentices than the industry with the next most active apprentices in 2020, signifying a need for such programs in closing the skills gap in this sector.[18]

The CWDC and the Colorado Department of Higher Education (CDHE) echo the need for skilled labor in these industries. The CWDC's 2021 Talent Pipeline Report lists the top 5 posted industries on Connecting Colorado in 2021:

- Administrative and Support and Waste Management and Remediation Services
- Professional, Scientific, and Technical Services
- Health Care and Social Assistance
- Retail Trade
- Manufacturing[19]

Though CWDC compiled this list from job postings on a state job board, four of the five industries in the list mirror the findings from Independence Institute's shift share analyses. A high number of unfilled job postings provide a good indication of employers or industries struggling to find workers suited to meet their needs. This is often, though not always, due to a skills shortfall or mismatch.

CDHE takes a different but also useful approach to identify where skills gaps might exist. The agency maintains a database of Colorado's top jobs, defined as those jobs with above average expected demand growth over the next ten years.[20] It then breaks those jobs into tier 1 and tier 2 jobs based on salary levels. Users can sort the database by the level of education required for each occupation. Top jobs requiring at least a bachelor's degree include accountants and auditors, financial managers, civil engineers, general and operations managers, architectural and engineering managers, computer and information systems managers, physician assistants, and lawyers, to name just a few. The professions span across many of the industries identified by Independence Institute and CWDC as those experiencing skilled labor shortages. Because of the level of education needed to pursue these careers, however, many of these jobs remain far out of reach for workers currently in low-skilled jobs. Those workers may benefit from some additional training or schooling to increase their salary and job security significantly without the need for a bachelor's degree or a post-graduate education.

The CWDC's Top Jobs database includes several tier 1 and countless tier 2 jobs available to Coloradans, which require less than a bachelor's degree. The

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healthcare industry includes several of the highest-demand jobs with tier 1 wages that require less than a bachelor's degree. These include diagnostic medical sonographers, for example, who can expect a median hourly wage of $41.21 after obtaining just an associate degree. The industry provides a prime example of where an associate degree could launch a low-skilled, low-wage worker into a lucrative and secure career while also filling a need in the Colorado economy. While most healthcare career pathways demand at least an associate degree, the vast majority of tier 1 and tier 2 top jobs requiring less than a bachelor's degree necessitate formal schooling only up to a high school diploma or equivalent. Most of these, however, do require additional training or certifications, often acquired through an apprenticeship. These include electricians, plumbers, structural iron and steel workers, carpenters, and construction equipment operators.

Through several agencies involved in workforce development—and often in collaboration with private partners—the state of Colorado produces an impressive amount of data and information on an ongoing basis designed to assess and address the workforce needs of the state economy. In addition to their annual talent pipeline report, CWDC publishes a "career pathways" guide.[21] CDHE publishes and maintains numerous resources including the Colorado Top Jobs database to keep a pulse on the workforce needs of the state.[22] CDLE maintains OnwardCO, a public-private partnership with a coalition of Colorado companies and several other state agencies designed to connect workers displaced by COVID-19 to retraining and job search services.[23] CDE publishes and regularly updates a career and technical education report (CTE) report on work-based learning indicators in Colorado.[24] CWDC also produces an annual report on the state's activities related to the federal Workforce Innovation and Opportunity Act.[25] This list only scratches the surface on the available resources, yet all of those resources and more cannot capture knowledge sufficient to resolve the workforce needs of the entire state economy.

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THE KNOWLEDGE PROBLEM

Nearly infinite inputs influence the labor market in the modern economy. No study, no scholar, and certainly no government agency could wholly identify the precise causes for the shortage of skilled workers in the labor market at any given time. Neither could anyone pinpoint precisely how many laborers possessing which specific skills the economy may require to entirely close the skills gap. Twentieth century Economist Friedrich Hayek famously described the universal economic principle underlying this problem in his 1945 essay for the *American Economic Review* entitled "The Use of Knowledge in Society." Hayek explained, "[T]he 'data' from which the economic calculus starts are never for the whole society 'given' to a single mind which could work out the implications, and can never be so given."[26] This is the problem government faces when attempting to develop policy to eliminate the mismatch between the skills within the workforce and those needed by industry to meet consumer demands. The knowledge necessary to understand and thus close the skills gap in the labor market is dispersed throughout society.

An indeterminable number of economic actors—from businesses owners and job site managers to educators and policymakers to the millions of consumers who dictate what products and services industry will supply—each possess a small portion of the total knowledge necessary to fully understand workforce needs. Even if someone obtained all the knowledge necessary to develop a plan to meet the needs of the labor market, conditions would change before any central planner could design and execute it. Hayek rightly perceived, "[E]conomic problems arise always and only in consequence of change. So long as things continue as before, or at least as they were expected to, there arise no new problems requiring a decision, no need to form a new plan."[27] Federal, state, and local governments have produced countless plans in recent decades to address workforce challenges, but circumstances in the economy inevitably change, necessitating new plans in perpetuity. The economic problem of skills gaps in the workforce endures, because the economy changes continually.

Year after year CWDC publishes their "Colorado Talent Pipeline Report;" each time the labor needs of the economy change before the ink dries. That fact is no indictment of failure on the part of CWDC or any other state agencies working to address the skills gap. It rather speaks to the universal and eternal economic principle identified by Hayek: "[C]entral planning based on statistical information by its nature cannot take direct account of [changing] circumstances."[28] In the first place, macro conditions often change in the economy before state planners or economists anticipate them. For example, the 2019 report did not prepare its readers for the millions of baby boomers who retired early during the pandemic, which came the following year.[29] This would have been difficult to predict.

The kind of knowledge Hayek refers to, however, includes knowledge even more specific to a particular set of circumstances than this. He described "the man on the spot" with the "limited but intimate knowledge of the facts of his immediate surroundings."[30] Such intimate knowledge, for example, as that possessed by the line supervisor in a production plant who knows that four of his machinists are nearing retirement and one of his welders just put in his two-week notice might exemplify this. Instead of things always continuing as they are, "the continuous flow of goods and services is maintained by constant deliberate adjustments, by new dispositions made every day in the light of circumstances not known the day before." No government agency could ever hope to keep up.

Reports and databases are nonetheless helpful. Indeed, they provide policymakers with a useful snapshot of labor supply and demand, industry needs, and what public policy is doing and can do to address skilled labor shortages. But neither they nor any other report can provide the full picture. Only the millions of individual economic actors in society making seemingly insignificant decisions independently of one another can hope to meet all the supply and demand needs in a well-functioning economy. This proves as true for the labor market as for any market. Because central planners will always fall short of the knowledge necessary to engineer the labor market properly—they will always encounter the *knowledge problem—all public policy intended to address the labor needs of the economy must rely instead on free market principles.*

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TENETS OF EFFECTIVE WORKFORCE DEVELOPMENT POLICY

Meetings with stakeholders from government, private industry, educational institutions, and public policy think tanks have informed the policy recommendations outlined in the next section of this report. The reports listed in previous sections and many others not listed also provided valuable insight. As part of the background research for this paper and the forthcoming recommendations, Independence Institute conducted separate research and produced the report entitled "The Colorado Skills Gap: Underlying Causes," referenced earlier in this paper under the section "Colorado's Skills Gaps."

Despite the research that went into developing this paper, its author faces the same knowledge problem as anyone else. And make no mistake; many stakeholders—including most or all of those from the meetings referenced in the last paragraph—have dedicated more years and more energy to addressing the needs in Colorado's workforce. Yet, over a century of policies based on the best of such research and knowledge has failed to solve the problem. It would serve little purpose to jump on the dogpile of technocrats attempting to dissect the particulars of this complex economic problem and prescribe hyper-specific, government-engineered solutions. For that reason, this paper first offers a list of guiding principles for any future workforce policy before offering specific policy recommendations in the next section:

1. Market forces rather than central planning must drive solutions.
2. Any public funding must be tied to no more than two simple, specific, and easily measurable outcomes.
3. Government programs and incentives cannot be so overly cumbersome or complex as to prevent widespread use by industry and/or laborers.

> If the Colorado economy has a persistent mismatch between the demand for skilled labor and the supply of the same, market forces – the invisible hand – will need to bring this imbalance back to equilibrium.

Market forces rather than central planning must drive solutions.

The previous section discusses a prevailing principle of modern free-market economics. Because of the knowledge problem, central planners, despite their best intent and efforts, have a poor track record of solving supply and demand imbalances. If the Colorado economy has a persistent mismatch between the demand for skilled labor and the supply of the same, market forces – the invisible hand – will need to bring this imbalance back to equilibrium.

In a December 2021 essay on the teachings of 19th century economist Carl Menger, American Institute for Economic Research Senior Fellow Richard Ebeling captures the idea underlying this first tenet perfectly:

> *"Individuals know their own circumstances better than any of those in government possibly can, and the motives of family and personal improvement will serve as the incentives for each to act in the most industrious and productive ways as they think and discover to be best. Complex market processes do not need a commanding political hand."*[31]

The freedom of millions of individual economic actors making independent decisions has proven most successful at creating the most prosperity for the greatest number of people. Conversely, the 20th century provided powerful examples of the failings of centrally planned economies.[32] The same economic principles apply to all types of markets within an economy, including the labor market.

Perhaps the best approach to realizing equilibrium between the supply and demand side of the skilled labor equation would be to eliminate all federal, state, and local policies that have created perverse incentives affecting the labor market. Pulling that thread, however, would unravel over a century of policies spanning across not just workforce development but countless other policy areas also. For example, the federal government's decision directly and indirectly to fund higher education in America beginning in the 20th century had several effects. First, it increased the demand for higher education by giving potential students money, which they could only use to pay university tuition (and related expenses). Students who may have otherwise pursued a vocation now had access to the capital necessary to attend university. This new influx of cash into higher education also created an incentive for universities to lower their standards so they could admit students and access that pool of cash. Students who may have otherwise been better suited for vocational training could now gain admittance into a bachelor's program. Following from this example, to eliminate all government policies that may have contributed to the current predicament would start with divorcing government from higher education funding—a politically untenable prospect.

Viewed pragmatically, Colorado policymakers cannot and will not repeal the entirety of federal and state government interventions that have contributed to the skilled worker shortage—undoubtedly including some designed to solve it. Considering the possible unintended consequences of heavy-handed government policies, state policymakers should remain even more vigilant to ensure future policies are underpinned by free-market forces rather than reliant on the wisdom of central planners. Colorado currently has programs with elements of both.

The Colorado First Job Training Grant Program, for example, takes a top-down approach to closing the skills gap, which depends on government decisionmakers rather than market forces. The "FY 2022 Grant Policies and Procedures" for the program explains that the program "focuses on providing assistance to established Colorado businesses in order to remain competitive within their industry, adapt to new technology, and prevent layoffs."[33] In a free-market economy, however, competition sorts out whether businesses are providing the best value to the economy. This program empowers government administrators to determine whether an uncompetitive business—one not providing sufficient value—ought to receive a boost from taxpayers.

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The state of Colorado also has examples of programs that rely more on private actors in the market to drive solutions. Programs that rely on private dollars necessarily have more of a market-driven component, as actors in the private economy must volunteer their capital to fund or help fund the programs. For example, the WORK Act, passed as House Bill 15-1276, provided matching grants to organizations that "fill existing needs for skilled workers in the market."[34] An organization only received funding if they "partnered with industry to offer or fund a skilled worker training program."[35] While the bill did not execute this first tenet perfectly, it contained market driven elements. If a private organization has partnered with private industry to fill a workforce need, and that organization is willing to put forth the capital to meet that need, there is a good chance the free market has signaled that need to those entities.

Any public policies intended to address the shortage of laborers with certain skills should leverage the knowledge and freedom of individual economic actors making independent decisions to solve the problem. This could be as simple as reducing artificial—perhaps government-created—barriers to enter certain professions or enabling companies to use their own dollars to solve workforce needs.

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In economics and in public policy, incentives matter. Funding is one of the primary incentives, which government employs to incentivize economic behavior. This is certainly true for workforce policy. Laws often say something to the effect of, "If you want access to the money authorized under this bill, you must do X, Y, and Z." This approach presents dangerous pitfalls for policymakers. First, this power to create incentives often tempts policymakers to play central planner. They find it necessary to appoint government experts to research and analyze the problem and determine a litany of complex criteria for receiving funding. Alternatively, though related, they may create a list of vague criteria and leave it to expert bureaucrats to determine whether someone or something merits funding. Due to the knowledge problem discussed in the previous section, they rarely get it right. Too often, policymakers or agency bureaucrats set criteria which create incentives that do not produce the desired results. And if the criteria were many and complex to begin with, it becomes very difficult to ascertain precisely where the program failed.

Policymakers must first determine clear goals before they can set metrics. They must ask, "What outcome do we want?" Independence Institute research and numerous publications by various state agencies have found that Colorado suffers from a skilled worker shortage. Workforce policy should aim to close that skills gap. Policymakers must therefore identify metrics, which correlate with producing that outcome. Successful programs tie continued funding to those metrics or outcomes to ensure success.

Where funding serves as the incentive, and certain metrics determine whether that funding continues, funding recipients will work to achieve success according to the metrics set by policy, not necessarily according to the needs of the economy. Of course, effective policy aligns the two such that meeting metrics also means meeting the needs of the economy. But how do policymakers know whether their policies have succeeded in doing so? To create proper accountability, metrics must be 1) limited in number to one or two and 2) they must be simple, specific, and easy to measure against stated outcome goals.

First, policies must have few enough metrics in place that policymakers can identify which metric failed or succeeded to incentive the desired behavior in exchange for funding. If a program fails to produce the desired results—in this case, closing the skills gap—and the program used only one metric to assess funding, then it is clear which metric failed to create proper incentives. With only two metrics, determining the point of failure remains a relatively simple task. With more it could prove difficult or impossible to determine where the program failed—or succeeded for that matter.

In addition, the metric or metrics used to allocate funding must be simple and specific so that policymakers know precisely how to assess a program against them. For example, a metric that fits this criterion might provide funding to a CTE training program each time one of its graduates attains a job in the field for which the program trained them. Policymakers can easily see whether programs have met the standard. If a program receives taxpayer dollars to train Coloradans for work in a skilled trade and none of its graduates enter jobs in the trade for which they were trained, something clearly is not working. A poorly designed program, in contrast, might tie funding to an overly complex or overly vague metric. For example, a requirement to "improve student success" would not provide clear accountability. In the case of an ambiguous metric such as this, it would also have to rely on the arbitrary discernment of an administrator or bureaucrat to determine whether a program has met the standard.

One model known as "performance-based funding" provides a useful example of a type of metric that fails to abide by this tenant. The model measures outcomes such as graduation rates, certificates conferred, field of study, course completion, and the number of students meeting credit milestones. In this setup, programs often tie funding to countless metrics, and those metrics can be ambiguous, intricate, and difficult to measure definitively. The approach often fails because of a misalignment of measurements and goals.[36] Research by the Texas Public Policy Foundation found that performance-based funding "may lead some institutional leaders to abandon, distort, or manipulate [their core mission] to inflate performance metrics."[37] They found, "Some systems encourage administrators to change inputs instead of outcomes."[38] Unfortunately, most workforce programs in Colorado also have vague goals and a wide range of metrics to determine success.

CDHE's *master plan*, "Colorado Rises: Advancing Education and Talent Development," for example, confers vague platitudes but provides no simple, concrete metrics to ensure Colorado's educational institutions prepare students for a successful career. It reads, "If the state of Colorado is to prepare its students for changing workforce demands and maintain its high quality of life and vibrant economy, it must invest more in the educational attainment of all its citizens."[39] It then lists four goals:

1. increase credential completion
2. erase equity gaps
3. improve student success
4. invest in affordability and innovation[40]

Another CDHE program designed "to increase the attainment of post-secondary credentials and degrees for under-served students in Colorado,"[41] the Colorado Opportunity Scholarship Initiative (COSI), includes several vague performance metrics with no guarantee of closing the skills gap:

- maintain or grow the number of students served
- ensure 90% of grantees achieve their stated goals and objectives
- exceed first-year persistence rates
- exceed post-secondary certificate and degree completion as compared to students not participating in COSI[42]

Clearly, these do not pass the "one or two" metrics test under this tenet; neither do they pass the second part of the test. If one of these programs

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fails to achieve the end goal of closing the skills gap, it would be hard to determine which metric failed to create the incentives to deliver that result. Perhaps a COSI program grew the number of students served but did so in a way that did not help to close the skills gap. Or maybe they served their students in a useful way, but grantees set the wrong "goals and objectives" so that even when 90% of them achieved them, reaching those goals and objectives did not close the skills gap. With several metrics used to hold recipients accountable, it could prove difficult to determine which metrics create the proper incentives and which do not. Improving student success, a goal for the first program, does not provide a specific and easily measurable outcome-based metric. Such a metric would require either a detailed and complex set of guidelines for determining exactly what "student success" means, or else it would depend on the whims of a program administrator to determine whether a program had attained this goal. Such program designs do not allow for proper accountability or ensure programs will produce the desired outcome of closing the skills gap.

Colorado currently has a pilot program that, at least in part, follows this second principle well. House Bill 19-1236 created the Workforce Diploma Pilot Program, which "provides financial incentives for eligible providers to reengage Colorado adults in obtaining a high school diploma and other credentials." Policymakers designed the program "to meet workforce goals for future economic growth." They included simple outcomes-based measures to ensure program participants, or "qualified providers," accomplish this goal. The law ties the amount of reimbursement providers receive to simple, easily measured outcomes. Providers receive—

- $1,000 for every accredited high school diploma,
- $250 for every employability skills certification program completed by students, and
- $250, $500, and $750 for industry-recognized credentials, depending on the amount of training required.

This reimbursement mechanism directly ties the financial interests of providers to specific, easily measurable outcomes. Providers receive funding for awarding educational credentials, which can help students market themselves for future employment. If students receive a diploma, certification, or credential, the provider gets paid. While the program provides funding for several different specific outcomes, they all fit under the same general category, therefore, this meets this second policy tenant. Policymakers could improve the program by including a second or different outcomes-based metric to help ensure the credentials students receive are in demand. Such a mechanism would further improve the program if driven by market forces rather than central planners. The state of Texas employs such a mechanism for some of its vocational education funding.

The "returned value" funding model follows this policy principle and provides a high level of probability that state funding to vocational education will help to provide the economy with in-demand skills. Texas bases funding for the Texas State Technical College (TSTC) system on the earnings of students after graduation. This formula has proved extremely successful for students in the workforce.[43] This makes sense, as the

The "returned value" funding model follows this policy principle and provides a high level of probability that state funding to vocational education will help to provide the economy with in-demand skills.

funding mechanism closely mirrors the price mechanism in market economics, as described by economists such as Carl Menger, Friedrich Hayek, and others. Henry Hazlitt provides a useful summary of the role of prices in a free market system in "Economics in One Lesson":

> *"[T]he relative supply of thousands of different commodities is regulated under the system of competitive enterprise. When people want more of a commodity, their competitive bidding raises its price. This increases the profits of the producers who make the product. This stimulates them to increase their production. It leads others to stop making some of the products they previously made, and turn to making the product that offers them the better return."*[44]

Workforce policy aims to increase the supply of a particular commodity, namely skilled labor. If businesses need more laborers with a particular skill, they will bid up the price of that skill by offering more attractive wages. This will influence more people to "produce" or acquire that skill, since it offers them an attractive return. Increasing skilled labor often requires participation by both the person who will acquire and employ a skill in work and another entity who will provide the training or education to teach the skill (e.g., a community college, an apprenticeship program, etc.).

If workforce policy aims to increase the production of skills in the labor market to match the skills needed in the economy, the price mechanism provides the best signal for accomplishing that goal. In the case of labor, wages are the price signal. It follows that policymakers would want to tie workforce policies and funding to workers' wages. By connecting funding to wages, policymakers can leverage the price mechanism in market economics to close the skills gap. Under the returned value model, for example, if providers of education, credentials, apprenticeships, and other programs designed to prepare people for the workforce want to increase their funding, they can do so by providing an education that will result in higher wages for graduates. The price businesses will pay (i.e. the wage) for a particular skilled laborer signals the demand for that skill in the private economy.

In short, sound workforce policy should tie funding to one or two simple, specific, and easily measurable outcomes. If the goal is to close the skills gap, policymakers can expect to get the best results when they use job attainment and wages as metrics.

> In short, sound workforce policy should tie funding to one or two simple, specific, and easily measurable outcomes. If the goal is to close the skills gap, policymakers can expect to get the best results when they use job attainment and wages as metrics.

Government programs and incentives cannot be so overly cumbersome or complex as to prevent widespread use by industry and/or laborers.

During meetings in preparation for this paper, state agency officials lamented that industry players often need skilled workers and would benefit from government programs, but they do not know how to take advantage of them. In many cases, smaller firms simply lack the resources or manpower necessary to participate in state or federal programs or incentives. The state and federal government offer programs to boost and support apprenticeships, for example, but participation might require a full-time employee dedicated to interfacing with state and federal agencies, the company, and participating apprentices, one state official explained. Smaller companies often cannot afford this expense and consequently may not participate. Even to receive a grant, companies must dedicate time and resources to submit an application, navigating all the associated rules, procedures, and red tape. The Colorado First Job Training Grant Program has a list of 28 policies and procedures companies must comply with when applying for grants.[45] Unsurprisingly, large companies with deep pockets have an easier time taking advantage of government programs and incentives. The obvious solution is to create policies simple enough to experience widespread use.

The following section offers a targeted solution to help close the skills gap in Colorado while following the principles outlined here.

The tax credit would be awarded for qualified contributions to any approved CTE Opportunity Scholarship Organization.

POLICY RECOMMENDATION: CTE OPPORTUNITY SCHOLARSHIP TAX CREDIT

An opportunity scholarship tax credit to incentivize the training of skilled laborers could serve as a possible solution to Colorado's skills gap which follow the principles of sound workforce policy outlined in the previous section. The tax credit would be awarded for qualified contributions to any approved CTE Opportunity Scholarship Organization. Under the policy, these organizations could distribute tax credit eligible receipts to CTE Opportunity Scholarship Programs. Those programs would then award scholarships to provide vocational education and training, apprenticeships, reskilling or upskilling, or portable occupational certificates or credentials to Colorado residents.

- **The Tax Credit**—An individual or business may receive a tax credit equal to 75 percent of their contribution to an approved CTE Opportunity Scholarship Organization in the current tax year. The credit will count against state income tax liability. While the credit will be non-refundable, a business or individual may carry the credit forward up to 5 years.

- **CTE Opportunity Scholarship Organization**—A CTE Opportunity Scholarship Organization (CTE OSO) must expend at least 90 percent of tax credit eligible receipts on CTE Opportunity Scholarship Programs. It must be a nonprofit organization exempt from federal tax under section 501(c)(3) of the Internal Revenue Code. CWDC will maintain a list of approved CTE OSOs on a publicly available website.

- **CTE Opportunity Scholarship Program**—CTE Opportunity Scholarship Programs (CTE OSP) must provide Colorado residents with vocational education and training, apprenticeships, reskilling or upskilling, or portable occupational certificates or credentials.

  The CWDC Executive Committee will approve programs for eligibility and the CWDC will maintain a list of eligible programs on a publicly available website. Eligibility is not meant to be difficult. Approval should be automatic for accredited institutions of higher education, apprenticeship programs registered with CDLE, COSI participants, and other programs already recognized by the state. Accountability will come from one simple metric, which programs must meet to maintain eligibility: Eighty percent of scholarship recipients must attain a salary equal to or exceeding 350% of the federal poverty level for an individual within one year of completion of the program.

Eligible programs may determine the selection process for scholarship recipients. They must abide by all equal opportunity laws and may not discriminate based on any protected class or violate any state or federal discrimination laws. The programs may use funds awarded by a CTE OSO for tuition assistance or other expenses related to vocational education and training, apprenticeships, reskilling or upskilling, or portable occupational certificates or credentials for the benefit of scholarship recipients.

This policy recommendation borrows a proven model from K-12 education policy and applies it for the first time to addressing the skills gap in Colorado. Legislatures in twenty-one states across the United States have created some form of tax credit to individuals and/or businesses that support scholarship-granting organizations (SGOs), which provide scholarships for select students to attend private schools.[46] These tax credit scholarships serve to provide students with better educational opportunities. Arizona adopted the first of these tax credit scholarship programs in 1997. In the 2018-19 school year, 55 SGOs awarded nearly 40,000 scholarships for students to attend any of the 345 participating schools. Most recently, Arkansas enacted a similar law in 2021 known as the "Philanthropic Investment in Arkansas Kids Scholarship Program."

These programs remain popular and are becoming more widespread, because they produce positive results for students. EdChoice surveyed families from the state with the largest of these programs in terms of participation, Florida, to determine the level of satisfaction with the state's tax credit scholarship program. Along with other positive feedback, it found that 92 percent of scholarship parents were satisfied with the program.[47] Based on parent responses, the survey report determined that the program has increased educational opportunities to families in Florida. Independence Institute expects that a similar policy underpinned by the same free-market principles will yield a similarly successful result when applied to workforce policy.

In addition to mirroring proven K-12 state policy, the proposed CTE Opportunity Scholarship Tax Credit abides by the free-market principles set out in the previous section of this paper. By awarding a tax credit rather than relying on government grants for funding, the policy allows actors in the private economy to determine where funding goes. This method crowdsources knowledge from the millions of individuals and businesses in the economy who may have some piece of knowledge pertaining to where skills gaps exist in the economy. If a business owner, for example, knows that a large portion of his HVAC technicians are approaching retirement, the tax credit incentivizes him to solve his own impending labor problem.

> By awarding a tax credit rather than relying on government grants for funding, the policy allows actors in the private economy to determine where funding goes.

Furthermore, training programs will only continue to have access to funding if they produce the desired results. The policy relies on the price mechanism via employment wages of program participants to ensure success. This follows the second principle by tying funding to a simple, specific, and easily measurable outcome. In doing so, it also employs the powerful price mechanism, doubling down on the first principle of market-driven solutions. If programs want to continue to receive funding, they must follow the price signals provided by wages.

Finally, the program is not overly complex or burdensome. Collecting the tax credit will require no more than filing a simple form and providing the Colorado Department of Revenue with a receipt for the contribution made to the CTE OSO. To continue receiving funding, participating programs will only have to collect and provide the state with one straightforward piece of information from those who went through their program with a CTE Opportunity Scholarship.

Because this policy recommendation follows the three tenets and is modeled after an already successful K-12 education policy employed across the nation, it will likely find success in helping to close the skills gap in Colorado.

[P]olicymakers should focus on crafting targeted solutions, always following the three principles outlined in this paper, even if those solutions only take a small bite out of the apple.

CONCLUSION

No single policy solution will end the labor shortage or entirely close the skills gap in Colorado's economy. As Dr. Merrifield concluded in his 2021 report on the Colorado skills gap and their underlying causes, "It is…very unlikely that any single policy reform would put a significant dent in the widespread skills gaps."[48] Nonetheless, he concluded, "Colorado policymakers should warm to the challenge by considering some possible quick, partial fixes such as boosting apprenticeship." Sweeping policies designed to solve this complex issue in one fell swoop stand the risk of creating perverse incentives that will only exacerbate the labor shortage and skills mismatch. Instead, policymakers should focus on crafting targeted solutions, always following the three principles outlined in this paper, even if those solutions only take a small bite out of the apple. The policy recommendation provided in this paper is one such politically viable policy solution that could, if successful, help to close the skills gap in Colorado and inform future efforts to address the skilled labor shortage in this state and others.

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