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How to Build Quality Apprenticeship Programs

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From AI developments to infrastructure investments, the US economy is constantly responding to dramatic changes. The skills that workers need are rapidly evolving right alongside it. Many good-paying jobs now demand technical skills and hands-on experience that require specialized training. Since the majority of Americans don't have a college degree, many people are wondering how to acquire the skills they need to make it in today's economy.

Apprenticeships offer a powerful solution. They let workers earn while they learn by pairing real job experience with technical instruction and recognized credentials. But, despite strong results in many programs, the US apprenticeship system is woefully small. Across the United States, programs are growing slowly, unevenly, and remain concentrated in a select few occupations. A key challenge to growing apprenticeships at scale in America is that apprenticeship quality continues to be inconsistently defined and insufficiently researched. Research often highlights apprenticeship outcomes, but it does not shed light on the design features that make quality programs possible. And, while policy tools exist, they haven't been consistently applied and continue to fall short of what's needed to meet national workforce demands.

Rigorous research is still needed to identify what constitutes "quality" in apprenticeships and how to achieve it. But given what is out there, this explainer identifies what we see as the core elements of a high-quality apprenticeship program and the policies that can help scale them. In doing so, we provide policymakers with a clearer blueprint on how they can dramatically scale an apprenticeship system built on quality and continue to invest in understanding what quality looks like.

Four Pillars of a Quality Apprenticeship Program

When people talk about apprenticeship metrics, they tend to focus on outcomes—things like post-program wages, retention rates, or job placement numbers. While these metrics matter, policymakers need to also understand the core components that make up the foundation of high-quality apprenticeship programs. Below, we break down the four pillars that are core to quality programs: **design, instruction, support, and evidence**.

1. Design

Takeaway: High-quality apprenticeships rely on intentional design, multi-party partnerships, and clear wage progression that align training with real labor market demand.

The journey to a high-quality apprenticeship begins long before an apprentice sets foot onto a worksite or into a classroom. It starts with program design. Strong programs are intentionally built to align skill development with labor market needs. This creates clear pathways for workers in their training journey, while also giving employers faith in their ability to rely on a strong talent pool.

High-quality apprenticeships are rarely a one-man show. Instead, structured partnerships between employers, community colleges, intermediaries, and unions play a key role in ensuring apprentices are gaining the skills and support they need to succeed. ¹ Research shows that multi-party sponsorship models can improve outcomes in part because they distribute responsibilities amongst one another and increase accountability by emphasizing a role in the system. Germany's apprenticeship model highlights the success of this approach. Since many stakeholders contribute and participate in the system, there is shared understanding that training maintains a high level of quality as a result. ² This approach also helps break down barriers for small and mid-sized employers who otherwise might not be able to sponsor their own program. ³

Yet, achieving **this level of collaboration is incredibly difficult with the current fragmentation in America's apprenticeship system.** Differences between federal and state registration processes, uneven staffing across State Apprenticeship Agencies (SAAs), and inconsistent technical assistance often slow down program approvals and confuse employers. States or regions that streamline these processes and facilitate coordination across agencies tend to launch programs more quickly and maintain higher standards over time. ⁴

Finally, a well-designed apprenticeship program includes clear expectations for earnings. **Transparent wage progression that is tied to skill milestones is a strong predictor of apprenticeship retention and completion.** ⁵ This clarity not only makes progress visible, but it also reinforces that learning on the job is a path toward further opportunities down the line. Tracking how close apprentices are to the pay of a fully trained worker can be motivating, especially for those apprentices balancing the demands of work and family. ⁶ Additionally, several states have made it a priority to avoid apprenticeships that start at too low of an earnings threshold or in low-wage industries. This reinforces the importance of paying apprenticeships a good living even at the earliest stages of their training. ⁷

2. Instruction

Takeaway: Instruction works when on-the-job training and classroom learning are well-integrated, competency-based, and backed by strong mentorship and credentials.

High-quality apprenticeships treat classroom instruction and work-based learning as a single, reinforcing system. When instruction is intentional, aligned, and sequenced, apprentices learn faster, advance more consistently, and complete programs at much higher rates.⁸

Quality programs organize work-based training around clearly defined competencies that are designed to take an apprentice from novice to skilled. Programs that outline job sequences and provide intentional on-the-job training procedures strengthen technical proficiency. They also lead to higher wages and completion rates.⁹ When apprentices understand what they're learning and can see how each skill builds on the last, they are far more likely to stay and succeed in their programs.

Classroom instruction is also most effective when it is tightly aligned with industry needs and reinforces the tasks apprentices encounter when on the job. **In other countries, like Switzerland, Germany, and the UK, employers and educational institutions co-design curricula that focus on industry relevance.**¹⁰ But finding qualified instructors to teach this related technical instruction (RTI) in the US remains a challenge. These instructors must both meet the expectations of being a qualified journeyman and fulfill qualifications as an instructor, thresholds that may look different from program to program. Plus, lower instructor wages mean some instructors may prefer to work longer than take a significant pay cut to teach. This problem will only intensify as apprenticeships continue to expand into new occupations, making growing the instructor workforce that much more important.¹¹

Currently, our economy remains skewed towards workers with four-year degrees, but apprenticeships have the potential to signal similar levels of skill attainment **when they utilize industry-recognized, stackable credentials.** Linking apprenticeships to credit-bearing coursework or stackable credentials provides a pathway for apprentices to move up within companies or to new employers. Apprenticeships also provide an avenue to help workers get beyond lower paying entry-level jobs into higher-demand fields (for example, helping certified nursing assistants become registered nurses.) High-quality programs utilize these credentials to both deepen employer confidence in the skills workers have and offer a foundation for long-term mobility for apprentices.

Mentorship is another key that ties these instructional components together and is one of the most consistently cited drivers of apprentice success. Many apprentices leave programs due to personal, financial, or motivational barriers. But strong mentorship, alongside good design and supportive services, plays a critical role in keeping apprentices engaged and on track to complete their training.¹² **Effective mentors help apprentices connect theory to practice, troubleshoot challenges, build confidence, and develop professional**

skills. ¹³ This is especially true for younger workers or those apprentices with limited job experience.

3. Support

Takeaway: Supportive services are not nice-to-have extras but are required for strong retention and employer ROI.

High-quality apprenticeship programs recognize that workers do not enter programs with identical resources, obligations, or barriers. Supportive services are one of the strongest predictors of whether apprentices persist and complete their training. Transportation assistance, child care support, tutoring, and career coaching each play a meaningful role in reducing the non-academic barriers that often derail participation. Evidence suggests that when apprentices have access to these supports, retention can improve by 10-15%. ¹⁴

Strong apprenticeship programs prioritize the needs of their apprentices and invest in the kinds of services that can help participants fully engage with their programs. ¹⁵ These investments help level the playing field for workers who may face higher barriers to starting and completing programs, whether that be for veterans transitioning to civilian work or working parents navigating child care responsibilities. ¹⁶

Supportive services also help programs reach underrepresented populations of workers. **Programs that embed practices such as proactive outreach, cohort models, or partnerships with community-based organizations have higher enrollment and retention.** As apprenticeships expand into new industries, sustaining these supports will be essential to ensuring that program growth does not come at the expense of inclusion.

Despite their impact, supportive services are often first to be cut when funding tightens. **This is a strategic mistake: supportive services are not ancillary—they are foundational for both retention and employer return on investment.** Workers who stay and complete programs often become productive employees, validating the very purpose of an apprenticeship.

4. Evidence

Takeaway: Data shows that apprenticeships work, but there is still a lack evidence on which design and instructional features drive results.

Despite decades of promising evidence that apprenticeships boost employment and earnings, far less is known about *why* some programs produce stronger results than others. This means that, comparatively, little attention is paid to the design and instructional mechanisms that generate good results. **This imbalance leaves policymakers without the**

evidence needed to replicate quality programs at scale. Closing these gaps is essential for building a modern apprenticeship system capable of expanding into new industries and meeting labor-market demand.

One of these gaps is a lack of insight into the impacts of apprenticeship program design and instructional practice. Apprenticeship is at its core a learning model—hence the “earn-and-learn” designation—yet apprenticeship research rarely investigates insights from adult learning, instructor practices, or instructional design. **While we have strong reason to believe that apprenticeships “work,” we don’t know which structural elements contributed and where.** ¹⁷ In countries like Germany and Switzerland, workplace trainers are required to have formal training on best practices for teaching methods. ¹⁸ This helps instructors not only communicate their jobs-based knowledge more effectively but also center their teaching around improving student outcomes. In the United States, there is little rigorous evidence evaluating how coaching, curriculum design, and instructional methods influence learning and completion. ¹⁹ It is critical to understand what and how parts of apprenticeships programs, like competency-based frameworks, mentorship quality, or assessment practices, improve outcomes for learners.

As apprenticeships continue to rapidly expand into new sectors of the economy, we will need more evidence on how to implement quality training programs to support this growth. **New industries often have different work environments, rapidly evolving skill needs, and limited experience with structured training.** ²⁰ Without rigorous evaluations, policymakers risk scaling models that may not match the learning demands of these fields.

Another major blind spot in our apprenticeship landscape is the prevalence of unregistered programs. ²¹ Some estimates suggest that nearly half of all apprentices may be training in programs outside the Department of Labor system. This is not to say programs operating outside the system are bad, and there are numerous examples of high-quality unregistered programs. This includes well-known employer-led models like the Federation for Advanced Manufacturing Education (FAME). ²² **But because these programs are not captured in national datasets, policymakers have little visibility into their structure, outcomes, or reasons for remaining unregistered.** ²³ Understanding this segment of apprenticeship programs is increasingly important as states and intermediaries work to recruit new employers and expand apprenticeship into emerging sectors.

Addressing these evidence gaps will require stronger data systems, more rigorous evaluation, and a deeper focus on instructional quality—not just outcomes. **A modern research base would give policymakers the clarity needed to identify what works and help scale high-quality apprenticeship programs across the country.**

How Policymakers Can Scale Apprenticeships in America

The US apprenticeship system needs help if it is going to reach true scale. Today, it relies on time-limited grants, uneven state efforts, fragmented oversight, and incompatible data systems. If apprenticeships are going to function as a serious national talent-development strategy rather than a patchwork of promising local initiatives, the federal government has a huge role. That includes creating systems that reward quality, provide stability, and make it easier for employers, educators, and intermediaries to participate.

Below, we suggest over a dozen policies to expand and improve apprenticeships, each of which fall under **four key strategies available to policymakers**. These include:

1. **Resources:** Establish stable, outcomes-oriented funding.
2. **Coordination:** Create a unified, streamlined apprenticeship framework and eliminate fragmentation across states and systems.
3. **Accountability:** Modernize and integrate data systems to measure quality and track outcomes.
4. **Partnership:** Strengthen state capacity and provide incentives that support high-quality program implementation and expansion.

Together, these strategies provide a roadmap for building a coherent, scalable, and high-quality apprenticeship system capable of meeting the country's long-term workforce needs.

1. Resources

Goal: Establish stable, outcomes-oriented funding.

Federal funding sets the direction for the entire apprenticeship ecosystem. Temporary grants have helped spark innovation, but they have not created the stable, long-term incentives needed for apprenticeships to grow in a systematic way. Evaluations from the *American Apprenticeship Initiative* make this clear: the United States needs a permanent, outcomes-focused investment strategy that aligns funding with data, accountability, and systemwide expectations.²⁴ When federal resources are predictable and rules are coherent, states can plan, employers commit to longer-term talent growth, and apprentices gain access to programs that are built to last.

We recommend the following:

Replace short-term grants with multi-year investments. Today's funding environment is fragmented. Federal grants, state initiatives, and philanthropic pilots all operate with different schedules, priorities, and reporting requirements. This patchwork forces colleges, intermediaries, and employers to chase grants instead of planning for long-term growth. Multi-year federal investments would provide the stability needed to build capacity, maintain quality, and scale programs, rather than continually restarting them.²⁵ This could be done via the Workforce Innovation and Opportunity Act reauthorization, National Apprenticeship Act reauthorization, annual appropriations, or other stand-alone legislation.

Utilize performance-based funding. Performance-based models, often called pay-for-performance, tie funding directly to outcomes like completion rates, credential attainment, or wage progression. England, France, and Australia have used variations of these models to move from short-term pilots to more stable, national systems.²⁶ In these models, apprenticeship funding is automatic, formula-based, and tied to clear outcomes rather than rooted in one-time grants.²⁷ This helped sustain growth and improve employer participation across these countries. A US model anchored in measurable milestones would provide predictable financing for programs while rewarding those that deliver results.²⁸ These milestones should certainly go beyond just apprenticeship hires or start up rates, as research shows this approach doesn't produce strong outcomes.²⁹ Considering federal investment in pay-for-success is still new, further research and pilot studies could help test where and how it might be most successful in the US system.³⁰

Support program facilitators and community-based expansion. Policies like the Apprenticeship Hubs Across America Act would create statewide hubs modeled on successful intermediaries that link employers, educators, apprentices, and community organizations. Expanding funding for American Job Centers (AJCs) would also increase access by enabling partnerships with libraries and community centers and expanding capacity for digital skills training, counseling, and transportation supports.

2. Coordination

Goal: Unify federal governance and system alignment.

Fragmentation across federal and state systems makes starting apprenticeships harder than it should be—especially for employers new to the model. Differences in definitions, data fields, approval timelines, and registration requirements create unnecessary friction. A coherent national strategy requires clear, streamlined governance.

We recommend the following:

Align federal and state systems under a unified framework. A fragmented apprenticeship system also undermines the ability to maximize the use of federal dollars. Right now, the Department of Labor and state agencies operate with different definitions, reporting requirements, and approval timelines. All of this creates inconsistent expectations for employers.³¹ Federal policymakers could harmonize definitions, reporting fields, quality standards, and approval timelines to reduce administrative burden and create a more predictable environment for businesses. This could be done through federal guidance or rulemaking or by federal legislation that directs the adoption of common definitions.

Streamline and standardize data requirements across states. Apprenticeship programs receive funding from various sources and interact with different sponsors throughout the process. But, regardless of these differences, data submission processes for employers should be consistent and easy to use. This is especially important for program sponsors who operate across federal and state agencies, as they may face different reporting structures or duplicative submissions just because their program crosses state lines.³² Streamlined requirements make it easier for employers to participate and reduces the administrative friction that inhibits program growth.

3. Accountability

Goal: Mandate and invest in robust data systems.

The data infrastructure behind apprenticeships has come a long way in the last decade, but the system is still far from delivering everything policymakers, employers, and workers need. Right now, our apprenticeship data strategy is focused too heavily on compliance. This isn't inherently bad, but it means we are missing out on key data points that measure program quality and return on investment. A data system built for insight, not just reporting, is essential for expanding policies that work and discontinuing those that don't.

We recommend the following:

Strengthen national data infrastructure. Currently, apprenticeship program administrators often report similar information into multiple systems, each with different definitions and requirements.³³ A more coherent approach would standardize data fields, streamline reporting expectations, and appoint a governance body responsible for ensuring consistency.³⁴ Centralizing and aligning these requirements would reduce redundant reporting while also providing the federal government and states with a more accurate picture of program quality.

Link apprenticeship, education, and wage data. Apprenticeship outcomes can't be evaluated in a vacuum. Rather, when looking at data points like apprenticeship completion

rates, it is important to also understand how various *external factors* are impacting apprentice success. Linking apprenticeship records with education, workforce, and wage data would allow policymakers to track long-term earnings, job mobility, and differences in outcomes across sectors and populations. Connecting these records to state tax credits, incentive funds, and supportive services would also help identify the impact of investments in wraparound services and program structure on completion rates and post-program success.³⁵ This could help policymakers and program sponsors understand how to target funding and best support apprentices.

Strengthen state data capacity. Many states lack the staff and technology needed to maintain, organize, and analyze apprenticeship data.³⁶ Federal support should help states build dedicated data and evaluation teams, update their systems to align data collection with federal definitions, and integrate apprenticeship data with state's broader workforce systems. Some states are already spearheading these efforts by building their own apprenticeship databases in response to gaps in federal systems. This highlights the need for federal leadership and support to help states align with one another. It also prevents states who haven't been able to build these systems the chance to catch up to their peers.³⁷

Improve how data is utilized in policy. Better data on apprenticeships plays a role in supporting good governance at the state and federal level. States and federal agencies should ensure that apprenticeship coursework counts toward degrees or recognized credentials, establish dedicated apprenticeship offices and cross-agency task forces, and professionalize apprenticeship staffing. These agencies should especially prioritize staff who handle evaluation and quality assurance efforts, to help guide new strategies moving forward. These steps would shift the system to be one focused on using actionable data to drive meaningful reform.

4. Partnership

Goal: Drive quality through state capacity and incentives.

Federal policymakers play a decisive role in shaping how effectively states can build, sustain, and scale high-quality apprenticeship systems. While states implement programs on the ground, the federal government can help ensure they have the resources, flexibility, incentives, and support structures required to both start these high-quality programs and then also deliver them at scale. To make apprenticeships a key part of states' workforce and economic strategies, federal policy should target strengthening state capacity and aligning incentives to grow quality programs.

We recommend the following:

Increase state-level capacity. Federal policy can push states to move beyond the use of short-term grants by ensuring that they have access to stable long-term funding. States may be hesitant to embed apprenticeship initiatives into their annual budgets for fear of relying on federal funds that might not come. Multi-year federal investments and formula-based funding give states the ability to maintain dedicated apprenticeship offices, expand the number of field staff, invest in technical assistance, and modernize data systems.³⁸

Create strong federal incentives for program creation and employer participation.

In order to meaningfully expand the involvement of employers in the apprenticeship system, federal policymakers can help states offer a mix of incentives that lower the cost and complexity of starting apprenticeship programs. This includes matching funds for state tax credits, grants for employer training costs, and federal support for workforce intermediaries that help small and mid-size employers get involved. These supports should be focused on program outcomes and worker success. For example, tax credits could increase in value based on whether or not programs achieve certain metrics. Federal resources can also help states provide supportive services like transportation or child care stipends. These efforts can especially help improve retention and expand access for working parents, lower-income learners, and underrepresented communities.

Enhance instructional quality through federally-supported research. As apprenticeships expand into high-growth fields, like IT or health care, federal leadership is crucial in guiding instructional best practices. Federal funding for causal research on adult learning, competency-based progression, mentorship, and on-the-job training can help states to establish their own evidence-based program standards. Federal dissemination of model curricula or training frameworks could help ensure that any rapid expansion of programs does not dilute quality.

Conclusion

Apprenticeships can be one of the country's most effective tools for expanding access to good jobs, but only if the system is designed to deliver quality at scale. The pillars outlined in this explainer—strong program design, high-quality instruction, meaningful supportive services, and a more rigorous evidence base—highlight what is needed to attain a coherent national strategy on apprenticeships. With targeted federal investment, streamlined governance, modernized data systems, and stronger state and intermediary capacity, apprenticeships can become a central driver of economic opportunity. But in order to make this vision a reality, policymakers must use the levers at their disposal to bring our nation's workforce policy infrastructure in line with economic goals. This would dramatically improve the opportunities available to non-college workers across the country.

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