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What the Evidence Says—and Doesn't Say—About Short-Term Credentials

Insights from a Systematic Review and Meta-Analysis

AUTHORS

Brandy Maynard, Professor, Saint Louis University; Harly Blumhagen,
Harly Blumhagen, Graduate Research Assistant, Saint Louis University
Jeff Bulanda, Vice President, Britebound Center for Career Navigation at JFF

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Executive Summary

Short-term credentials (STCs) have become a central component of the nation's workforce development strategy. Over the past decade, federal and state investments have expanded rapidly as policymakers seek faster, more affordable pathways into high-demand occupations. The passage of Workforce Pell marks one of the most significant new investments in short-term workforce education in decades, extending Pell Grant eligibility to qualifying short-term programs and further accelerating interest in these credentials as a strategy for expanding economic opportunity. As investments continue to grow, an important question remains: *What does the strongest available evidence tell us about the effectiveness of STC programs?*

This systematic review and meta-analysis provide one of the most comprehensive syntheses of evidence to date. Drawing on 37 rigorous evaluations representing more than 293,000 participants, the review examines the impact of STC programs on credential attainment, employment, and earnings outcomes among primarily low-income populations. The findings suggest that well-designed STC programs can improve credential attainment and employment outcomes. At the same time, they raise important questions about the durability of earnings gains, the scalability of current program models, and the conditions under which credentials translate into long-term economic mobility.

Perhaps the review's most important contribution is that it clarifies what the existing evidence actually evaluates. Although discussions often focus on the value of STCs themselves, the overwhelming majority of studies did not evaluate credentials as standalone educational offerings. Rather, they examined comprehensive workforce interventions that combined credential training with coaching, navigation, employer partnerships, work-based learning, academic advising, financial assistance, and/or other learner supports. Only two studies evaluated standalone credential models. Consequently, the evidence base reflects the effectiveness of broader programs in which credentials serve as one component of a more comprehensive intervention rather than the effectiveness of credentials in isolation.

Several findings emerge consistently across the evidence. First, participation in STC programs substantially increased credential attainment. Participants were more than twice as likely to earn a credential as individuals assigned to comparison groups, demonstrating that these programs generally achieve their most immediate objective. However, credential completion remained well below universal levels, averaging approximately 47% across treatment groups, even among highly supported demonstration programs. Only two of the 28 studies reporting completion exceeded

the 70% completion threshold required under Workforce Pell, raising important questions about expectations as programs expand nationally.

Second, employment outcomes improved, although gains were more modest than in credential attainment. Participants were more likely to obtain employment related to the credential they earned and experienced modest improvements in overall employment. Earnings outcomes, however, proved considerably more variable. While several programs generated substantial long-term wage gains, many produced modest or null effects, and some found earnings that ultimately favored comparison-group participants. Because studies measured earnings using different approaches and follow-up periods, the review could not produce a pooled estimate of earnings impacts, underscoring the need for caution when making broad claims about the economic returns to STC.

Finally, this review advances the conversation by clarifying what the current evidence can and cannot tell us. It confirms that comprehensive workforce programs incorporating STCs can improve outcomes, but it stops short of identifying which program elements consistently produce lasting economic mobility. The next chapter for the field is not simply to scale short-term credentials but to identify and intentionally design around the principles that consistently translate training into long-term career mobility across different learners, sectors, and labor market contexts.

Why This Matters Now

STCs occupy an increasingly prominent place in discussions about workforce development, economic competitiveness, and postsecondary education. Faced with persistent labor shortages, rising concerns about college affordability, and rapidly changing skill demands, policymakers have increasingly embraced shorter, industry-aligned training programs as an alternative or complement to degree pathways. Community colleges, workforce boards, employers, and training providers have responded by expanding certificate and certification programs designed to prepare learners for employment in high-demand industries within months rather than years. For this review, STC programs were defined as *structured workforce training programs lasting 12 months or less that prepare people for entry into a new occupation through industry-aligned skills and credentials.*

This policy momentum has accelerated significantly in recent years. The expansion of Workforce Pell reflects growing bipartisan consensus that federal financial aid should support high-quality workforce programs that can prepare learners for in-demand occupations. States have likewise invested heavily in short-term workforce initiatives through community colleges, workforce agencies, and sector partnerships. Despite this rapid expansion, the evidence base informing these investments has often been interpreted more simply than the research supports. Relatively few rigorous studies have isolated the effects of credentials independent of the broader workforce programs in which they are delivered. Understanding this distinction is increasingly important as policymakers and program leaders seek to replicate successful models at scale. By synthesizing nearly two decades of rigorous evaluations, this analysis offers a more comprehensive understanding of where the current evidence stands, where important questions remain, and what policymakers, program leaders, and researchers should consider as investments continue to expand.

About the Evidence

The authors conducted a systematic review and meta-analysis to identify the strongest available evidence on STC programs in the United States. The search initially identified 51,716 records from academic databases and other sources. After duplicates were removed and titles, abstracts, and full-text articles were screened against predefined inclusion criteria, the final analysis included 37 rigorous studies representing 293,006 participants. The evidence spans programs implemented between the early 2000s and 2021. It includes 25 randomized controlled trials and 12 quasi-

experimental evaluations, providing one of the most comprehensive and rigorous syntheses of causal evidence currently available on STC workforce programs.

The participant population reflected the primary audiences served by workforce development systems. Most programs targeted adults with low incomes, without a postsecondary degree, and/or barriers to employment including access to transportation and childcare. Approximately two-thirds of the studies reporting participant earnings served people earning less than $15,000 annually prior to enrollment, indicating that most participants were unemployed, underemployed, or working in low-wage occupations. Although three studies focused specifically on young adults ages 16–24, the average participant age across studies was 33. Healthcare represented the largest occupational sector in the evidence base (65%), followed by manufacturing, transportation, skilled trades, and information technology.

One of the review's most important findings concerns the nature of the interventions themselves. More than 80% of the studies evaluated workforce programs in which credential training was embedded within a broader package of services that commonly included career coaching, academic advising, employer engagement, navigation, financial assistance, and wraparound supports. Only two studies approximated a standalone credential intervention. As a result, the evidence base primarily reflects the effectiveness of comprehensive workforce development models rather than the independent impact of credentials alone.

Another important consideration is how program impacts were estimated. The review relied on intent-to-treat analyses, the standard approach for evaluating interventions using randomized and quasi-experimental designs. Outcomes were measured for everyone assigned to the treatment group, regardless of whether participants completed the program. Likewise, comparison-group participants often retained access to existing workforce services and could pursue alternative education or training opportunities during the study period. Consequently, the reported findings estimate the effect of offering these programs under real-world implementation conditions rather than the outcomes achieved only by participants who completed training.

Finally, the review highlights an important limitation that shapes the interpretation of all findings. The programs included in the evidence base varied substantially in their design, target populations, industries, employer partnerships, learner supports, implementation strategies, and outcome measures. Statistical heterogeneity was consistently high across many analyses, indicating that program impacts differed considerably from one study to another. The quality of the evidence was also mixed. Risk-of-bias assessments found some concerns in many of the randomized studies and moderate risk in many of the nonrandomized studies, with a smaller number rated at high or critical

risk. Rather than identifying a single average effect that can be generalized broadly, the review points to a broad landscape of workforce interventions operating under different conditions and producing different results. Understanding this variation, along with limitations in the quality of some of the studies, is essential for interpreting the findings presented in the sections that follow.

What the Evidence Found

The review examined three primary outcomes: credential attainment, employment, and earnings. Across these outcomes, the evidence presents a consistent but nuanced picture. STC programs were generally successful in increasing credential attainment and improving employment outcomes, particularly in occupations aligned with participants' training. However, evidence for sustained earnings gains was considerably less consistent, suggesting that credentials alone may not be sufficient to produce long-term economic mobility.

STC Programs Increased Credential Attainment. The most consistent finding across the review was that participation in an STC program substantially increased the likelihood of earning a credential. Across 20 studies included in the pooled analysis, participants assigned to treatment groups had more than twice the odds of earning a credential compared with people assigned to comparison groups (OR = 2.23).

Although this finding may appear intuitive, it represents an important validation of the programs' underlying theory of change. The comparison groups in these studies were not denied access to education or workforce services. Rather, most continued to receive "business-as-usual" services, including access to community colleges, workforce agencies, and alternative training opportunities. Consequently, the observed effects demonstrate that participation in these programs increased credential attainment beyond what participants were likely to achieve through existing workforce systems.

Despite these positive impacts, completion rates remained well below universal levels. Across treatment groups reporting completion outcomes, the average completion rate was 47.1%, with rates ranging from 12.1% to 76.1%. Only two of the twenty-eight studies exceeded 70%. These findings are particularly noteworthy because many of the evaluated programs operated under favorable demonstration conditions, including intensive participant supports, experienced providers, receiving technical assistance, and substantial public and philanthropic investment. Whether comparable completion rates can be achieved as programs expand under routine implementation conditions remains an important unanswered question.

Employment Outcomes Improved, but Gains Were More Modest than Credential Attainment. The review found evidence that STC programs improved participants' employment outcomes, although these effects were considerably smaller than those observed for credential attainment. The strongest employment impacts occurred in occupations directly related to participants' training. Across fifteen studies, participants had nearly twice the odds of working in a credential-related occupation compared with comparison-group participants (OR = 1.99). This finding suggests that the programs were effective in helping participants enter the industries and occupations they were designed to serve.

Improvements in overall employment, however, were more modest. Across 11 studies, participants had slightly higher odds of being employed, regardless of occupation (OR = 1.15). While statistically significant, these findings suggest that STC programs may be more effective at directing people into targeted sectors than substantially increasing overall labor force participation.

Earnings Outcomes Were Positive but Highly Variable. The evidence regarding earnings was considerably more complex than the findings for credential attainment or employment. Across 15 studies examining whether participants met minimum earnings thresholds established by the programs, people assigned to STC programs had modestly higher odds of meeting these benchmarks (OR = 1.21). However, these findings mask substantial variation across individual programs. While some evaluations reported meaningful earnings gains, others found little or no impact, and several observed higher earnings among comparison-group participants over longer follow-up periods.

Unlike credential attainment and employment outcomes, the review was unable to conduct a pooled meta-analysis of continuous earnings because studies measured earnings in fundamentally different ways. Some reported quarterly earnings; others reported annual wages or weekly earnings, while follow-up periods ranged from several months to 10 years after enrollment. This inconsistency prevented the calculation of a single overall estimate of earnings impacts and required the researchers to rely on narrative synthesis rather than statistical pooling. Several patterns nevertheless emerged from the evidence.

First, the sector appeared to matter. Health care programs comprised nearly two-thirds of the evidence base and frequently produced strong gains in credential attainment and employment while generating relatively limited earnings improvements. Many entry-level health care occupations offer modest wage premiums, meaning credentialed workers often compete for positions that pay as much as jobs requiring fewer formal credentials. By contrast, information

technology programs demonstrated substantially larger long-term earnings gains, suggesting that labor market returns vary considerably across occupational sectors.

Second, some of the strongest long-term earnings gains appeared in programs that extended well beyond classroom instruction. Programs such as Year Up and Per Scholas integrated employer partnerships, structured work-based learning, intensive coaching, and strong labor market connections into their models. While the review cannot conclude that any individual program component caused stronger outcomes, these findings suggest that employer-connected experiences may play an important role in translating credentials into sustained labor market success.

Finally, several studies documented earnings gains that diminished over time. One plausible explanation is that comparison-group participants frequently pursued alternative workforce services, accumulated work experience, or obtained similar credentials through other pathways. Because comparison groups generally retained access to existing education and workforce systems, narrowing differences over time should not necessarily be interpreted as program failure.

Cross-Cutting Findings

Beyond the individual outcome analyses, the review identified several broader themes that have important implications for interpreting the evidence and designing future workforce programs.

Programs Were Highly Adaptive. The review also found considerable variation in how programs operated over time. Many modified credential offerings, adjusted employer partnerships, revised recruitment strategies, or expanded learner supports in response to changing labor market conditions and participant needs. Rather than functioning as fixed educational products, many programs operated as adaptive workforce systems capable of continuous improvement. This operational flexibility complicates efforts to identify which specific program components produced observed outcomes. It also raises important questions about replication. Demonstration programs often benefited from intensive technical assistance, experienced leadership, and flexible funding that may not be readily available as programs expand nationally.

Screening Practices Complicate Interpretation. Although nearly all programs were designed to serve populations with low incomes, many relied on extensive participant screening before enrollment. Approximately 62% used readiness or motivation assessments, while 57% imposed additional eligibility requirements such as background checks or drug testing. Even among

programs explicitly focused on expanding opportunity, screening remained common. These findings suggest that the reported impacts reflect outcomes among people who had already demonstrated a degree of readiness for participation. Whether similar results would be achieved among broader open-access populations remains uncertain and represents an important consideration as policymakers seek to expand access to STC programs.

Limitations

The findings should be interpreted in light of several limitations in the available evidence, many of which reflect broader challenges in workforce research rather than shortcomings of the review itself.

- Studies reported outcomes inconsistently. Measures of employment, earnings, credential attainment, and follow-up periods varied substantially across studies, limiting direct comparisons and preventing pooled analyses for several important outcomes, including long-term earnings.

- Many evaluations provided limited program-level detail. Studies often lacked sufficient information about program design, implementation, participant characteristics, and the intensity of supports, making it difficult to identify which features were associated with stronger outcomes.

- Programs were analyzed as a single intervention despite important internal differences. Multi-site evaluations often combined results across institutions, sectors, or credential pathways without reporting outcomes separately, limiting the ability to understand how impacts varied across different program models or industries.

- Reporting on implementation was often incomplete. Changes to curriculum, employer partnerships, participant supports, and delivery models were not consistently documented, making it difficult to determine whether differences in outcomes reflected program design, implementation quality, or local labor market conditions.

Implications for Policy, Practice, and Future Research

The findings from this review arrive at an important inflection point for workforce policy. Public investment in STCs continues to expand through Workforce Pell, state workforce initiatives, employer partnerships, and community college systems. At the same time, employers are increasingly seeking workers with industry-recognized skills that can be developed outside of traditional degree pathways. As these investments grow, the evidence presented in this review suggests several considerations for policymakers, education and training providers, and researchers.

For Policymakers

- **Pair credential education and training with student supports.** Learners and workers experience the strongest outcomes from credential education and training programs that pair instruction with meaningful student supports, rather than from standalone credentials. Policymakers should be cautious about assuming that tuition financing alone can generate comparable outcomes.

- **Approach Workforce Pell implementation with realistic expectations.** Most evaluated programs operated under highly favorable demonstration conditions, including braided funding, experienced providers, and intensive participant supports, yet completion rates still varied considerably.

- **Scale investment alongside evidence.** The review provides encouraging evidence that well-designed short-term credential programs can improve credential attainment and employment outcomes. However, the evidence is less conclusive regarding long-term earnings and reflects programs operating under conditions that may not exist at scale. Policymakers should continue investing while strengthening data systems, improving interoperability, and expanding transparent, consumer-facing information to clarify which program models consistently support long-term economic mobility.

For Education and Training Providers

- **Design programs around learner success, not credential completion alone.** The strongest-performing programs integrated advising, coaching, employer engagement, and

work-based learning throughout the learner experience rather than treating the credential as the sole intervention.

- **Build pathways, not just placements.** First-job placement is an important milestone, but it should not be the end goal. Education and training providers should partner with employers to create clear advancement pathways that support continued skill development, progression to higher-value credentials, and movement into higher-wage occupations over time.

- **Strengthen employer partnerships beyond advisory roles.** Programs that embedded employers through internships, clinical experiences, apprenticeships, hiring partnerships, and other forms of work-based learning generally demonstrated stronger employment and long-term earnings outcomes than those relying primarily on employer input into curriculum design.

- **Plan for multiple learner pathways.** Not every applicant will be admitted, and not every participant will complete. Providers should build clear referral and re-engagement pathways that help learners continue progressing toward employment and education goals.

- **Build organizational capacity for continuous improvement.** Labor markets, employer needs, and learner populations evolve. Rather than assuming a successful program model will continue to produce strong outcomes, providers should routinely assess participant outcomes, employer feedback, and labor market demand, using that evidence to refine curriculum, partnerships, supports, and pathway design.

For Researchers and Funders

- **Standardize how outcomes are measured.** Greater consistency in measuring credential attainment, employment, earnings, job quality, advancement, and educational progression would improve the comparability of future studies. The field needs a shared language across studies and reports.

- **Move beyond whole-program evaluations to identify what actually drives outcomes.** Future research should test the independent and combined effects of program components, including employer engagement, work-based learning, navigation, coaching, wraparound supports, and credential attainment, to identify the design principles that consistently improve outcomes for different learners and in different contexts.

- **Build a stronger evidence base on standalone credential programs.** Much of the existing research evaluates comprehensive workforce interventions rather than credential programs alone. Rigorous evaluations of standalone STC programs are needed to better understand the value added by the credential itself and the conditions under which additional supports produce meaningful returns.

- **Study effectiveness under real-world implementation conditions.** Many of the strongest evaluations examined highly resourced demonstration projects with experienced providers, braided funding, and intensive technical assistance. Future research should assess whether similar outcomes can be achieved as programs scale through Workforce Pell and other routine funding environments.

- **Fund replication and implementation research.** The workforce field has invested heavily in developing new program models but far less in understanding whether successful approaches can be replicated across institutions, regions, and labor markets. Future investments should prioritize implementation science and continuous learning to understand how effective models can be adapted at scale while maintaining quality.

- **Study who is left behind.** Future evaluations should examine outcomes for applicants who are screened out and participants who do not complete programs to better understand their trajectories.

Conclusion

This review provides what we believe to be one of the most comprehensive syntheses of evidence on STC workforce programs to date. It reinforces that many programs can increase credential attainment and support entry into employment. Still, it also demonstrates that long-term earnings outcomes are far more variable than credential completion alone would suggest. The review's greatest contribution is that it clarifies the questions the field must answer next. Rather than identifying a single "short-term credential effect," the evidence reveals a range of workforce interventions that differ in their design, implementation, target populations, employer engagement, and support services along with a broad and unstandardized set of research methods and measurements. As a result, the review cannot determine which specific program components or participant characteristics consistently drive long-term career mobility. The next generation of research should focus on identifying the design principles that reliably produce strong outcomes across different learners, sectors, and labor market contexts. Understanding those active

ingredients and how they can be implemented at scale under real-world conditions will be critical as we expand pathways into quality jobs beyond college degrees.

Appendix: List of Included Studies

Studies are ordered alphabetically by the study we designated as the primary study. Each primary study is designated with an asterisk. Secondary reports of primary studies are listed under the primary study.

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