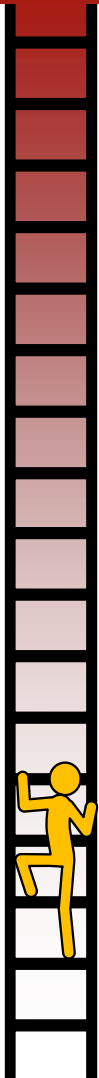
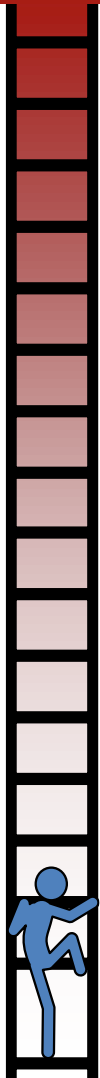


Making Every Rung_{of} the **Credential Ladder** Count

Understanding How Community College Certificates
Can Meet Learner Expectations for Economic Mobility



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The logo for Education Equity Solutions features the text "Education Equity Solutions" in a sans-serif font. To the left of the text are three vertical bars of varying heights and colors: a thin red bar, a thin blue bar, and a thin yellow bar.

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The Lumina Foundation logo consists of a stylized orange circle with a white outline, composed of several concentric rings. To the right of the circle is the text "Lumina" in a large, bold, sans-serif font, with "FOUNDATION" in a smaller, all-caps, sans-serif font below it.

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EXECUTIVE SUMMARY

Policy makers, educators, and employers alike have touted community college certificates as a potential fast-track to economic mobility for those without a degree, particularly for populations historically segregated in low-wage work. Many states have adopted formal policies to support and encourage these certificates, and completion rates have increased steadily in recent years. Yet, quantitative evidence points to wide variability among certificate earners' labor market outcomes by field of study, program length, and participants' race and gender.

This variability raises questions about what it will take to unlock the potential of community college certificates to catalyze economic mobility. To better understand their perspectives on what makes a certificate program count, Education Equity Solutions conducted over 100 in-depth interviews with certificate earners from manufacturing programs, as well as with college personnel and employers involved in designing these programs. These interviews yielded new insights with important implications for policymakers and community college leaders invested in developing certificates that meet learner expectations and put participants on a true pathway to economic advancement.

Key Takeaways

Misalignment between participant and college goals for certificate programs results in unmet learner expectations.

Certificate earners expected that their credential would directly result in a “quality job” after program completion. They defined a quality job as offering a living wage, good working conditions inclusive of 8-10 hour shifts, a safe working environment, and opportunities for advancement.¹

Yet, community college educators were more likely to view the certificate program as a “first step” on a pathway toward economic mobility, recognizing that many entry-level jobs do not meet all the criteria of a “quality job.” Some college personnel described certificate programs as being designed to “spark interest” in the industry or help completers to “get their foot in the door” with employers. Others described them as the “first rung” on a ladder of “stackable” credentials, acknowledging that certificates are not designed to stand alone and often do not lead directly to family-sustaining work.

Colleges met graduates' expectations when they designed programs to target specific, quality jobs.

Not all of the manufacturing jobs that alumni entered after completing certificate programs met their criteria for quality jobs. Some of the most entry-level roles paid wages that were only marginally better than in retail or service industries and required long hours and difficult work conditions.

At the same time, slightly more advanced, technical roles were more likely to offer significant wage premiums and opportunities for employer-supported training and advancement. When colleges pegged certificate programs explicitly to these occupations and designed competencies to prepare students for these roles, they were more likely to lead to opportunities that met graduates' standards.

Despite efforts to facilitate advancement through “stackable” credentials, graduates are unlikely to return to college if their first job does not meet expectations.

Most alumni we interviewed found it nearly impossible to pursue further training if their initial job did not meet certain thresholds for earnings and work conditions – even if the college had designed the certificate program to be “stackable.”

Long work hours, low wages, and inflexible schedules in positions that did not meet their criteria for quality jobs made it difficult, if not impossible, for students to return to college. Furthermore, some alumni expressed skepticism that a second college experience would be significantly different from their first. While stackable credentials can create a ladder toward economic mobility, our study suggests that in practice, students are unlikely to advance if the first rung is too low.

Characteristics of community college certificate programs that met BIPOC participant expectations vs those that did not

Program Characteristics	Certificate Met Participant Expectations	Certificate Did Not Meet Participant Expectations
Alignment between program and participant goals	The program is designed to directly result in a “quality job” (i.e., pays a living wage, offers good working conditions and opportunities for advancement).	The program is designed as a first step, raising awareness of manufacturing careers and providing a “foot in the door,” but not necessarily leading directly to a “quality job.”
Curricular alignment with quality jobs	College personnel understand which high-demand jobs meet quality standards and design curricula based on skills needed for those jobs.	Program offerings are based around high-demand jobs without insight on the quality of those roles for workers.
Each rung of the credential ladder counts	Every credential in a stackable pathway leads to a quality job.	The first credential on a stackable pathway leads to jobs that do not meet quality criteria. Because the first “rung” of the ladder is too low, certificate earners are unlikely to advance. Lack of scheduling flexibility, employer support, as well as graduates’ disillusionment in college, contribute to making further education challenging.

This research suggests that students expect that certificate programs will pay immediate dividends. To better meet students’ needs and expectations while addressing regional workforce demands, colleges should pursue certificate programs that ensure graduates secure a quality job from the very start. While colleges cannot control job quality, they can be intentional about using labor market data and employer insights to select which certificates to develop and deliver, designing programs for jobs that meet specific quality standards in terms of wages and work conditions and equipping students with the right competencies to enter and advance beyond those roles.

State systems of higher education also have a role to play in incentivizing credentials that lead directly to a quality job by understanding and rewarding outcomes that align with certificate program participant expectations. By defining minimum quality standards for certificate program outcomes, states can help colleges avoid contributing to occupational segregation.

BACKGROUND

Community college certificate programs have grown in popularity over the last decade, with an increasing number of students earning these credentials and a greater number of states supporting these offerings.ⁱⁱ Many states view college certificates as a promising way to meet labor market needs by quickly equipping people without degrees with in-demand skills in high-growth sectors and occupations.

Yet, open questions remain about what it takes to unlock the potential of certificate programs as drivers of economic mobility for students and communities. Labor market returns to these credentials are highly variable, and the share of the population with certificates that have significant wage premiums has declined in recent years.ⁱⁱⁱ Studies of national and state administrative data attribute this variability to certificate length and field of study. Long-term certificates generally result in higher earnings, while short-term programs (less than nine months) tend to have the least labor market value (Dadgar & Trimble, 2015; Belfield & Bailey, 2017; Ositelu et al., 2021). This unevenness in returns has a disproportionate impact on students of color, largely because they tend to be overrepresented in the certificate programs that generate lower wages (Christensen & Turner, 2021).

The experiences and expectations of certificate earners, particularly graduates of color, offer valuable insight into these questions. To better understand their perspectives on what makes a certificate program count, Education Equity Solutions conducted over 100 in-depth interviews with certificate completers from four manufacturing programs across three states, as well as with college personnel and employers involved in designing these programs. We explored participants' goals, the characteristics of certificate programs that did (or did not) meet those expectations, and the consequences of any misalignment.

Interviewees included 83 participants who earned manufacturing certificates, primarily those who identified as Black, Indigenous, and people of color (BIPOC), along with 13 college personnel who oversaw the programs, and 11 employers who hired graduates from one of the four colleges. See Appendix A for more detail on research methodology and the racial background of the program participants we interviewed.

These interviews yielded new insights with important implications for policymakers and community college leaders invested in developing certificates that meet participant expectations and put them on a true pathway to economic advancement.

KEY FINDINGS

Misalignment between participant and college goals for certificate programs result in unmet learner expectations.

Program participants had clear expectations for what they will get from certificate completion: a “quality job.” They anticipated their program would lead directly to jobs with a living wage, good working conditions, and opportunities for advancement. Many had enrolled in college after working in retail and other service sector industries and were looking for better earnings and an improved work environment.

However, we uncovered a disconnect between what program participants, college personnel, and employers expect from certificate programs. Both employers and college personnel underscored the purpose of certificate programs as providing an entry point into the manufacturing sector. However, they did not have the same convergence or clarity as alumni about what an entry-level role would need to look like to be attractive.^{iv} Where graduates anticipated that programs would lead directly to a job that provides a living wage, good working conditions, and opportunities for

advancement, some college personnel described certificate program goals in terms of “raising awareness about the industry,” “sparkling interest,” or helping students “get their foot in the door,” as opposed to serving as a direct path to a quality job. Our review of a random sample of manufacturing program accreditation self-studies across the country revealed that very few colleges consider wage rates, job satisfaction, or retention as indicators of program success.^v

When a certificate failed to provide a direct path to a quality job, graduates were disappointed in the program’s outcomes. While some of the certificates we studied directly resulted in what program participants described as quality jobs, others did not. In the short-term, these graduates either chose to turn down job offers and return to working in other industries, or they accepted the job but expressed ambivalence about their long-term prospects in the manufacturing sector.

Certificate earners expressed dissatisfaction with relatively unskilled roles, such as assembler or operator positions, where employers described program participants as having only a marginal advantage over high school graduates who were competing for the same openings. These occupations did not generally pay a living wage, offered few formal opportunities for advancement, and in some instances, had variable work safety conditions. Additionally, these positions seemed to show less stability during an economic downturn, with employers reporting that these occupations were susceptible to layoffs.

Long hours working on heavy machinery was the most common complaint in jobs that did not meet graduate expectations. Program graduates, college personnel, and employers confirmed that it was typical to have 12-hour shifts in entry-level manufacturing positions. Interviewees shared how the long work hours interfered with family life, or in some cases, resulted in physical injury. Work safety was another concern among entry-level workers. Some felt employer-provided safety training was inadequate or that safety was sometimes compromised for efficiency. Whatever the reason for unsafe work conditions, interviewees reported limited uniformity or an absence of a baseline for safety levels across companies. Our findings about the difficult working conditions in entry-level positions can explain the quantitative trends of low entrance to and high attrition rates from the manufacturing sector (Armstrong, 2022; Abraham et al., 2003).

I had no idea when I joined the program how hard entry-level manufacturing jobs are. I had no idea I had to be in a clean room with no access to my cell phone all day ... so I just went back to my old job in sales because the slightly higher pay just wasn’t worth it for me.

Graduate, Certificate Program

Twelve-hour shifts are hard when you work with heavy machinery. It takes a toll on your body.

Graduate, Certificate Program

A “quality job” is a job with...

A Living Wage: Every program graduate we interviewed mentioned a “living wage” or “a good wage” as a top criterion for a quality job. Additionally, when asked about how they defined a good or living wage, program graduates provided dollar amounts that were highly convergent within the same region. For example, graduates in one region considered the wage threshold for a quality job \$25-26 per hour, and in another region, it was \$23-24 per hour.

Good Working Conditions: Program graduates cited work conditions, specifically schedules and safety, as an important criterion for a quality job. Graduates often mentioned they wished they could work an 8-10-hour day rather than the 12-hour shifts typical of entry-level manufacturing jobs, which can be especially challenging when working with heavy machinery.

Opportunities for Advancement: Program graduates frequently mentioned the desire to continue growing their skills and move up in their career. While some occupations provided advancement opportunities, others did not. In both cases, certificate earners were interested in jobs where they could receive more responsibility, training, and pay with years of experience.

Colleges meet program participants' expectations when they peg certificate design to "quality jobs."

Both program graduates and employers described tiers of occupational opportunity within the manufacturing workforce. The most entry-level, low-skill roles were the least likely to be eligible for employer-sponsored training due to high turnover rates and low skill requirements. These roles rarely met graduates' criteria for a quality job in terms of wages and working conditions. However, the jobs that alumni described as quality served as a gateway into more advanced roles. In addition to offering better wages, hours, and benefits, they provided a conduit to further training and advancement. Employers described a greater willingness to invest in these occupations, seeing long-term benefit in retaining these workers.

When colleges peg certificate programs to these quality jobs, graduates felt that their investment was worthwhile and that their credentials were durable and portable. Alumni described their skills as "recession-proof," expressing confidence that they could easily change employers if they were unhappy with their job.

Effectively targeting quality jobs with certificate programming required that colleges attune to labor market dynamics to accurately assess which roles are in-demand *and* meet graduates' benchmark for quality. It also required colleges to develop curriculum that equipped participants with the skills needed for those opportunities. When programs prepared students for quality jobs, faculty and administrators who had designed those certificates understood the distribution of occupations within the industry and had identified the specific point at which a job met alumni's standards. Additionally, these occupations met a skill threshold that made employers more willing to invest in continued training. These college personnel were not only aware of vacancies for target occupations but also knew the wages, job progression, and prospects for advancement with major employers hiring graduates as well as in the industry as a whole.

Additionally, college personnel overseeing these successful programs understood the skills required for those occupations and optimized program length to ensure students gained high-demand competencies. For example, college personnel understood from employers that CNC Machinist or Maintenance Mechanic roles required project-based work with real machinery, which took more than two or three months to complete. Some college personnel shared that nine months was the minimum duration of time needed to prepare students for quality occupations.

Notably, personnel from two particularly successful programs shared that they received pressure to reduce the length of their certificate offerings, although for different reasons. One particularly successful noncredit program had exceptional success in placing graduates in quality jobs and maintained a waitlist of hundreds every semester. However, college administrators who did not directly run the program believed its duration was too long for a noncredit certificate. Another program received pressure from the state to reduce costs by cutting down certificate length as well as equipment and staff expenses.

The certificate is gold.... I can go anywhere, and I have the upper hand. If I don't feel comfortable, I can go across the street [to another company].

Graduate, Certificate Program

To me, I'm happy where I'm at in my life. Without the program, I don't know where I would have been. I finally have a house, a family, I'm a grown up now. I credit this path to the program.

Graduate, Certificate Program

Despite efforts to facilitate advancement through “stackable” credentials, students are unlikely to return to college if their first job does not meet expectations.

Over the last decade, community colleges have worked to design stackable credentials as a means of helping students advance from short-term certificates and entry-level jobs into more skilled occupations. This movement toward “stackability” is based on the idea that a short-term certificate can serve as a “stepping-stone” or “the first rung” of an educational ladder, based on the assumption that students will return to college to take advantage of further opportunities to advance within the industry.

Building stackable programs is not easy. College personnel we interviewed described tireless work to overcome internal barriers to bridging certificates so that students could seamlessly count credits from one program towards the next credential. However, interviews with program alumni revealed that a greater barrier to “stacking” credentials was the low quality of entry-level jobs, which made it difficult to return to college for further training.

I’m a little scared and hesitant [to go back] because it didn’t work out for me just on the 3-month program, so it scares me to invest more.

Graduate, Certificate Program

We found that program participants whose first job after certificate completion did not meet their quality threshold were unlikely to continue their education in the field. Despite college efforts to facilitate advancement within the institution, graduates found it practically impossible to find the time and resources to re-enroll for additional training given inflexible and long work hours. Compounding the challenge, employer-sponsored training and advancement opportunities were limited for entry-level workers. Employers described a reluctance to develop people in these roles, citing high turnover. This lack of investment made it difficult or impossible for graduates in entry-level positions to acquire further skills, either through their employers or on their own.

Perhaps the biggest cost was the resulting disillusionment program participants felt toward the college. When a program failed to deliver on their expectations, alumni expressed skepticism that they would have a different experience if they pursued further education in the future. This perspective was particularly true for BIPOC graduates, many of whom were the first in their family to attend college.

Insights from these program participants may explain some of the reasons behind the nationally low levels of stacking among certificate earners. For example, one national study finds that only 3-5% of the college-educated population has stackable credentials (Bailey & Belfield, 2017). While stackable credentials can create a ladder toward economic mobility, our study suggests that in practice, students will not advance if the first rung is too low.

Table 1. Characteristics of community college certificate programs that met BIPOC participant expectations vs those that did not

Program Characteristics	Certificate Met Participant Expectations	Certificate Did Not Meet Participant Expectations
Alignment between program and participant goals	The program is designed to directly result in a “quality job” (i.e., pays a living wage, offers good working conditions and opportunities for advancement).	The program is designed as a first step, raising awareness of manufacturing careers and providing a “foot in the door,” but not necessarily leading directly to a “quality job.”
Curricular alignment with quality jobs	College personnel understand which high-demand jobs meet quality standards and design curricula based on skills needed for those jobs.	Program offerings are based around high-demand jobs without insight on the quality of those roles for workers.
Each rung of the credential ladder counts	Every credential in a stackable pathway leads to a quality job.	The first credential on a stackable pathway leads to jobs that do not meet quality criteria. Because the first “rung” of the ladder is too low, certificate earners are unlikely to advance. Lack of scheduling flexibility, employer support, as well as graduates’ disillusionment in college, contribute to making further education challenging.

DISCUSSION AND IMPLICATIONS

Evidence of varying labor market return to community college certificates has sparked a debate about the goal of these credentials. Some argue that certificates can offer students “a place to start,” while others advocate that they should “deliver longer-lasting benefits” (Merisotis, 2024). Certificate program participants involved in this study – who were primarily people of color – offer clear direction on this debate. They want long-lasting benefits *and* are specific about what they expect immediately after graduation: a quality job with living wages, good working conditions, and opportunities for advancement. We learned that programs successfully met student expectations and created equitable economic mobility when they intentionally aligned certificates to and designed curriculum for quality jobs. In other cases, college personnel acknowledged that these programs were not designed to stand alone. Instead, colleges built a “stackable” ladder of credentials to create economic mobility. Unfortunately, we found that certificate program graduates were unlikely to return to college for the next certificate if their first job did not meet their definition of quality.

While this study is focused on the manufacturing sector, the findings offer useful guidance for community colleges, policy makers, and employers interested in leveraging certificates for the advancement of participants. This research suggests that every rung of the credential ladder must count to create equitable economic mobility. Colleges cannot control job quality. Yet they can be intentional about using comprehensive labor market data and strategic employer partnerships to understand what types of jobs meet the expectations of their students. From there, colleges can select which certificates to design and deliver, pegging programs to jobs that meet specific quality standards in terms of wages and work conditions and equipping students with the right competencies to start in and advance beyond these roles. This approach will require new capacity within community colleges to forge strategic employer partnerships, analyze labor market dynamics, and use those insights to make programmatic decisions.

State systems of higher education also have a role to play in incentivizing credentials that lead directly to a quality job by understanding and rewarding outcomes that align with certificate program participant expectations. By defining minimum quality standards for certificate program outcomes, states can help colleges avoid contributing to occupational segregation. We acknowledge that pegging certificates to quality jobs will require college- and state-level infrastructure to support design and delivery of curriculum aligned with quality occupations. It will also require adequate state investment in colleges that is flexible in supporting a longer duration of training as well as necessary equipment and staff.

This study offers direction on future research designed to ensure every rung of the credential ladder counts for students. Additional areas of exploration include studying certificate program participants’ labor market expectations across other areas of study and/or regions. Future research should also examine how states and colleges can create the structures and incentives for systematically aligning program offerings with quality jobs, and when possible, prioritizing access for BIPOC learners.

APPENDIX: RESEARCH METHODOLOGY

We studied four manufacturing certificate programs across three states. We focused our study in this way because evidence shows that these offerings have some of the highest earning premiums, and therefore may provide insight into how to unlock the potential for certificates to create equitable economic mobility (Escoabri et al., 2021). Additionally, evidence shows many people do not enter the industry upon earning a manufacturing certificate, especially graduates of color (Abraham, 2023). While our study focuses on manufacturing, we expect that it has implications for other sectors with fewer job openings and lower wage rates.

We attempted to understand the connection between the vision of non-degree programs as a fast-track to economic mobility and the expectations and experiences of those completing manufacturing certificates. We asked the following research questions:

- What were BIPOC program participants’ goals for pursuing a manufacturing certificate?
- What characteristics help ensure certificate programs meet BIPOC participants’ expectations?
- What are the short- and long-term consequences when certificate programs do not meet participant expectations?

To answer these questions, we conducted in-depth interviews with program participants who earned a certificate, as well as college personnel and employers. The colleges were in large and racially diverse cities across the US. We selected certificate programs with racially diverse enrollment and high completion rates for BIPOC students. Two programs were noncredit while two were credit bearing. Two programs were nine months long, while two others were three and six months respectively. The two shorter programs offered certifications from the National Association of Manufacturing (NAM) based on successful passage of association exams, in addition to college certificates upon program completion.

Interviewees included 83 program participants who earned manufacturing certificates, primarily BIPOC participants (Table 2), along with 13 college personnel who oversaw the certificate programs, and 11 employers who hired graduates from one of the four colleges. Colleges recruited the participants, and researchers conducted virtual interviews with participants. Interviews with college personnel were 60 minutes long, while interviews with certificate earners and employers were 30 minutes long.

Table 2: Race/Ethnicity of Certificate Program Participants Interviewed

Race/Ethnicity	
African American/Black	14
Asian	11
Hispanic/Latino	44
Multiple Races/Ethnicities	4
Other/Unknown	5
White	5
Total	83

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NOTES

ⁱ Certificate completers participating in this study expected more from a “quality job” than what is included in the definition for a “good job” generated by the Georgetown Center for Education and the Workforce, which is based on median earnings. Find additional information on the Good Jobs Project at <https://goodjobsdata.org/faqs>.

ⁱⁱ The share of students earning community college certificates has dramatically grown in the last two decades, driven in part by states eager to provide efficient, relevant training to meet labor market demand. A 50-state analysis conducted by HCM Strategists in 2023 shows that, to date, states have launched around 60 short-term credential initiatives, on which they have spent at least \$3.81 billion.

ⁱⁱⁱ Data provided by A Stronger Nation (2024) – an initiative of the Lumina Foundation – finds that the number of credential earners in certificate programs that have a wage premium of 10-15 percent over those with a high school diploma has decreased, even though the number of individuals earning certificates continues to increase. Find more information at <https://www.luminafoundation.org/stronger-nation/>.

^{iv} Our study confirms findings from other surveys of program graduates that find graduates’ goals of finding a job that pays more (Edge Research & HCM Strategies, 2024; Douglas et al., 2023). Our study adds a level of specificity in terms of alumni’s criteria for a quality job in the manufacturing sector, including good working conditions and opportunities for advancement. This specificity can help inform existing efforts to measure occupational quality by including indicators that align with learner expectations. For efforts to define job quality, see Biu et al. (2024) and Gallup (2019). See also the Department of Commerce’s Job Quality Toolkit at www.commerce.gov/work-us/job-quality-toolkit/drivers-job-quality.

^v To get a better sense of the alignment between certificate earners’ expectations and program goals, we also reviewed manufacturing certificate programs’ accreditation self-studies to examine the metrics programs use for self-evaluation. We reviewed 20 randomly selected manufacturing programs across three states, and found that none included metrics on graduates’ wages, retention, or job satisfaction. Instead, colleges focus on student learning outcomes assessments; in some cases, they include pass rates for licensure programs, and in some rare instances, graduate job placement rates.