Characteristics, Quality, and Outcomes from Nontraditional Workforce Training Programs: Results from the Survey of Educational Attainment

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In today's economy, jobs increasingly require that workers have more than a high school education.[1,2] It had been estimated that about two-thirds of jobs will require postsecondary training or education by the year 2020 and that the availability of workers in this country with postsecondary education will fall short of projected needs by 5 million by the year 2020.[3,4,5] With the recent surge in unemployment and renewed interest in workforce training (and retraining) that has resulted from the COVID-19 pandemic, it is even more pressing to examine the variety of available training options and their potential value to workers.[6,7]

Although much research and attention has focused on the attainment of college degrees, less attention has focused on post-secondary, non-degree training programs, such as certifications/licenses, certificates, work training programs, and continuing education. In addition to the benefits to the U.S. economy, there are personal benefits associated with postsecondary training credentials that have been identified in the literature. Workers who obtain postsecondary training see financial gains over those with only high school education; high school graduates who earn a certificate see a 20 percent increase in wages over high school graduates with no additional postsecondary credential.[8] This research also shows that those with certificates experience earnings similar to that of workers with some college but no degree, and are in between the earners of high school graduates and those with Associate's degrees.[8] Further, within the same occupation, licensed workers earn higher wages and experience lower unemployment than unlicensed workers.[9]

However, much of the research has focused on training and career programs offered by postsecondary institutions of higher education, including community colleges, four-year colleges and universities, and trade schools. These career programs are largely provided by institutions that are recognized by postsecondary accrediting agencies. Yet, a growing number of career programs fall outside of traditional educational pathways. Many of these programs are neither accredited nor do they offer credit that is transferable toward another credential such as a certificate or a degree; they may not offer opportunities to amass credit toward a future credential, such as a postsecondary certificate or a degree. For example, boot camps provide training programs that lead to credentials such as nanodegrees or badges, which are awarded based on a learner's mastery of specific skills. A question that employers and workers might ask is whether these credentials are of sufficient quality to be of value in the workforce.

Despite the expansion in the number of career programs outside of traditional higher education in recent years, little is known about the range of programs offered and their long-term value. This research seeks to examine the variety of training programs that adult workers participate in and to examine the experiences and outcomes associated with this training. In this research, we draw a distinction between *accredited and portable* (A/P) training as opposed to *non-accredited and/or non-portable* (NA/NP) training. Accredited training is provided by institutions that receive accreditation from accrediting agencies that are recognized by the US Department of Education (ED). Training that is portable is provided by institutions that offer college credit that may be applied toward a program or degree at another institution. Typically, private not-for-profit and public institutions offer college credit that is largely portable (i.e., it is largely accepted as transfer credits at other institutions) and can

be applied to a credential at another institution. In contrast, credits offered by for-profit institutions or by training providers not recognized by the ED would not be portable since those programs or credits are generally not accepted or recognized by another institution or training provider.[10]

In short, A/P training is offered by an accredited college or university with earned credits that can be readily transferred and applied to another institution for further education or training. In contrast, NA/NP training is either (a) offered by a training provider that is not accredited, (b) does not provide credit that can be readily transferred or applied to future training or education at other post-secondary institutions, or (c) both. In our research, we focused on comparisons between A/P training programs and NA/NP training programs.

METHODS

The Survey of Educational Attainment was conducted by NORC at the University of Chicago with funding from the ECMC Foundation (ECMCF). The survey was fielded by AmeriSpeak®, NORC's probability-based panel that was designed to be representative of the U.S. household population. The survey was conducted between October 23 and November 22, 2019, with adults ages 18 to 64, including oversamples of those with a high school degree or below and those with Associate's degrees. To be eligible for the survey, individuals had to be working or planning to work in the next five years. A total of 2,290 completed the interview. Respondents could complete the interview by web or phone and in English or Spanish.[11]

The survey asked about workforce training experiences, including certifications and licenses, certificates, work experience programs (including apprenticeships), and continuing education. They were also asked about degrees completed. For the most recent training of each type that they completed, respondents were asked for information on the training provider, characteristics of the training program, reasons for pursuing training, usefulness of and satisfaction with training, applicability to their current job, and barriers to completing training.

FINDINGS

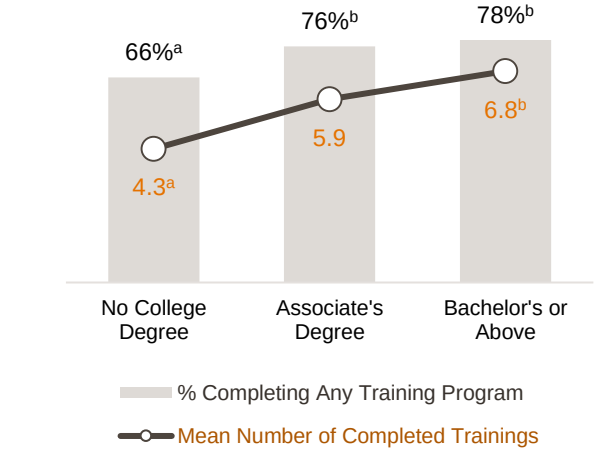
STUDY PARTICIPANTS

The survey population, weighted to be nationally representative, was about evenly split between men (50%) and women (50%). With regard to race and ethnicity, about 58 percent were White, 19 percent identified as Hispanic, 13 percent were Black, and 4 percent were Asian, with the remaining proportion identifying as another race/ethnicity or a combination of races/ethnicities. The average age of respondents was 39 years. In terms of educational attainment, just over half (55%) of the workers surveyed did not have any college degree, 10% had attained an Associate's degree, and just over a third (35%) had a Bachelor's degree or higher. Nearly two-thirds of the sample (64%) held a full-time job; 21 percent worked in part-time jobs, and 15 percent were looking for work.

WHAT PERCENTAGE OF WORKERS HAVE COMPLETED TRAINING AND HOW MANY TRAININGS HAVE THEY COMPLETED?

Overall, nearly three-quarters of workers (71%) had completed at least one training program. Among those who engaged in training, the average number of completed trainings was 5.4. As illustrated in Exhibit 1, the likelihood of having completed at least one training and the number of trainings completed was associated with education level. Having a four-year college degree was associated with a higher likelihood of completing at least one training and also having completed more total non-degree trainings. Those with Bachelor's or Associate's degrees were significantly more likely to have completed at least one training program than those without degrees.[12] Those with at least a Bachelor's degree completed significantly more total trainings than those without degrees; Associate's degree holders fell in between these two groups.[13]

Exhibit 1: Percent of Workers Completing Any Training and Mean Number of Completed Trainings



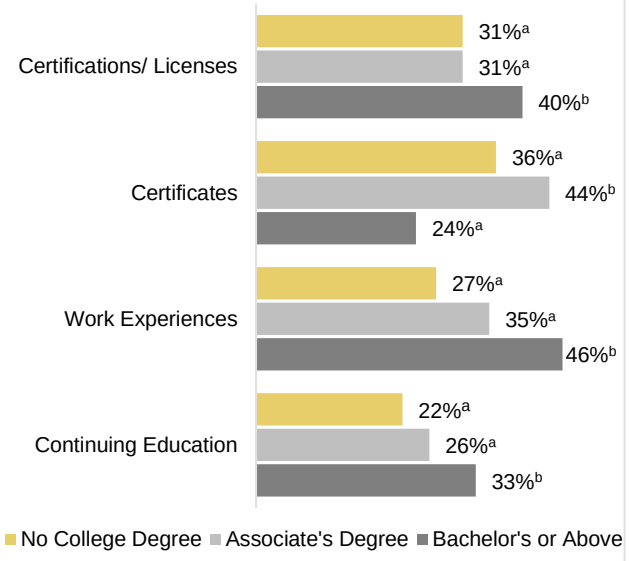
Note: When comparing results across education levels, estimates marked with different letters (e.g., a and b) are significantly different, p<.05.

Respondents were asked whether there was a training they began but did not complete. Nearly one-quarter of respondents (24%) failed to complete a training they started. Those with no college degree (28%) or an Associate's degree (24%) were significantly more likely to not complete a training compared to those with Bachelor's degrees or higher (17%).[14]

WHAT KINDS OF TRAININGS HAVE WORKERS COMPLETED?

The types of trainings that workers reported completing varied by education level. Approximately one-third of workers overall had completed a certification/license (34%), a certificate (33%), or a work experience (34.5%), and about one-quarter completed continuing education (26%). Once again, as shown in Exhibit 2, significant variations were seen based on education level. Individuals with a Bachelor's degree (or higher) were significantly more likely to have completed certifications/licenses,[15] work experiences,[16] and continuing education[17] than those with either an Associate's degree or no college degree. On the other hand, Associate's degree holders were significantly more likely to complete certificates than those with at least a Bachelor's degrees or no degree.[18]

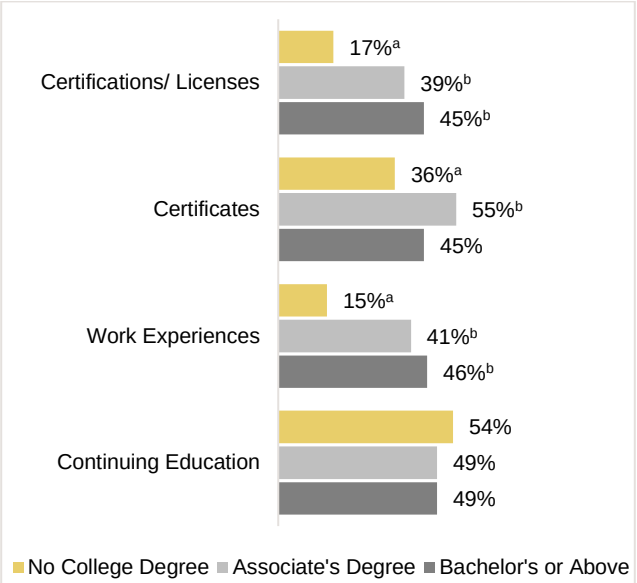
Exhibit 2: Percent Completing Specific Trainings by Education Level



Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

Although the majority of all training reported in the survey were from NA/NP sources, at least one-third of each type of training was secured from an A/P provider: certifications and licenses (34%), certificates (41%), work experiences (33%), and continuing education (42%).[19] For several types of training, degree holders were more likely to have secured training from A/P sources than non-degreed workers. As Exhibit 3 illustrates, those who had earned either a Bachelor's degree or an Associate's degree were more likely to have secured a certification/license[20] or a work experience training [21] from an A/P provider than those without a college degree. Associate's degree holders were more likely to have earned a certificate from an A/P provider than non-degree holders.[22]

Exhibit 3: Percent of Trainings from A/P Providers



Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

WHAT FACTORS ARE RELATED TO WORKERS' SATISFACTION WITH TRAINING?

We conducted a series of analyses to determine which variables or factors (including the A/P or NA/NP status of the training provider) were most strongly associated with individuals being "very satisfied" with their training experiences. Satisfaction was chosen as the outcome of interest because it provided the best overall assessment of the training, encompassing both the utility of the training and the quality of the program itself. Separate analyses were conducted for each of the four training types and included all individuals who reported completing that type of training.

The analyses used logistic regression techniques to compare the association between satisfaction with each of the four types of training and three different groups or "blocks" of variables: demographic characteristics, career characteristics, and training characteristics. More information about these blocks of variables is found in Exhibit 4.

Exhibit 4: Demographic, Career, and Training Program Characteristics

Demographic	Career	Training Program
Gender	Years in career	A/P status of provider
Race	Employment status	Delivery (in person, online)
Education level	Underemployed	Length of training
Age	Working multiple jobs	Breadth of reasons for training
US region	Recent professional development plan	Usefulness of training
Metropolitan area	Job on career path	Applicability to current job
	Annual earnings	Breadth of difficulties with training
	Any debt from training	Self-employed during training
	Total trainings completed	Employer required
		Employer paid
		CBO supported

Three major findings emerged from our analyses. First, the analyses showed that **characteristics of the training experience, not workers' demographic characteristics or career characteristics, were the most strongly associated with whether individuals were very satisfied with training**. This held true across all four types of training examined and was evident by comparing the pseudo-R^2 values of each block of variables.

Second, although the training variables overall had a strong influence on satisfaction, the **A/P v. NA/NP status of a training was not significantly associated with satisfaction** for any of the training types over and above the influence of all other variables in the statistical models.

Third, **the perceived usefulness of the training and its applicability to the worker's current job were the two biggest factors that did drive training satisfaction**. These were the only two factors that were significantly associated with training satisfaction across all four training types and, in all cases, reached the strongest levels of statistical significance. The results indicated that, if workers rated a training as either very useful or very applicable to their current jobs, they were between 2.3 and 5.9 times more likely to also be *very satisfied* with the training.

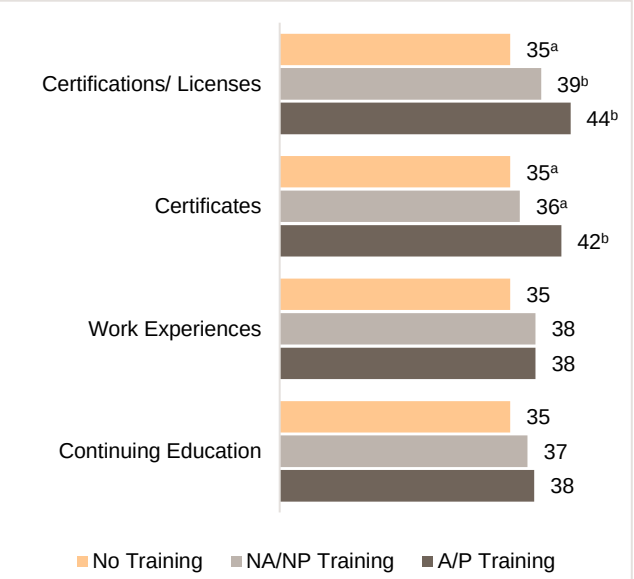
HOW DO A/P VS. NA/NP TRAININGS RELATE TO TRAINING AND CAREER OUTCOMES FOR WORKERS WITHOUT COLLEGE DEGREES?

We conducted another series of analyses to further investigate the association between the A/P status of the training provider and career outcomes, with a particular focus on workers who had *not* received any type of college degree (either Associate's or Bachelor's degrees). This sub-population of workers was used since prior research has shown particular benefits of post-secondary training and credentials for individuals who have yet to earn college degrees.[8,9]

The outcomes of interest in these analyses included: (a) current employment in a full-time position; (2) average weekly hours of work over the past year; (3) lack of a long-term career plan; (4) reported earnings from the last 12 months, and (5) levels of debt, including the proportion of individuals reporting *any* debt and the *amount* of indebtedness for those with debt.

When analyzing these outcomes, we compared three groups of non-degreed workers across the four types of training: certifications/licenses, certificates, work experience and apprenticeship programs, and continuing education. The three groups of non-degreed workers were: (1) those who had not completed any trainings; (2) those who had received that particular training from an NA/NP provider; and (3) those who had received that training from an A/P provider.

Exhibit 5: Mean Weekly Hours of Work



Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

Employment status and hours

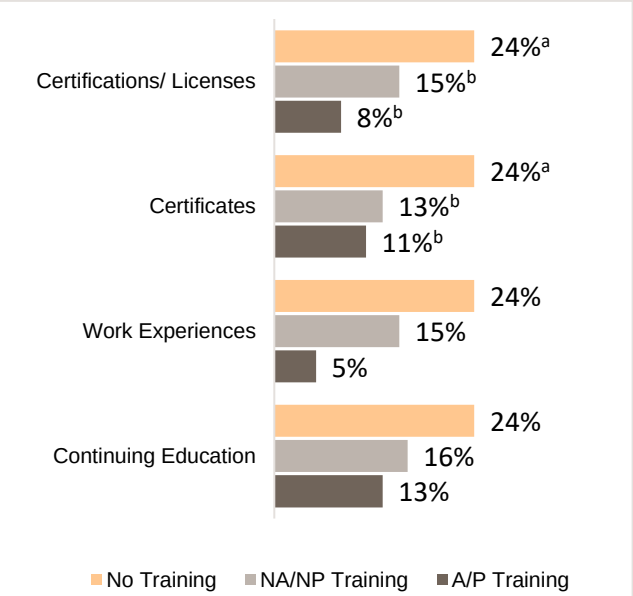
Although completing one of the four types of training was not significantly related to the likelihood that a non-degreed worker had a full-time job, it was significantly associated with their average number of weekly hours. With regard to the proportion of workers reporting full-time employment, there were no significant variations in the three groups of workers for any of the types of training, with about 73% of workers holding full-time jobs. With regard to average weekly hours of work, however, there was a clear trend showing that **workers with no degree and no training reported lower weekly hours than those who had**

completed a training (Exhibit 5). For two training types (certifications/licenses and certificates), these differences were significant: workers who completed an A/P certification/license[23] or an A/P certificate[24] reported significantly more weekly hours of work than individuals with no degree and no training.

Long-term career goals

In general, workers with no college degree were less likely to report having a long-term career goal compared to those who had completed trainings from either an A/P or NA/NP provider (Exhibit 6). The differences were significant for two training types. Non-degreed workers who had not completed any trainings were significantly less likely to have a long-term career goal compared to their non-degreed peers who had earned a certification/license from either an NA/NP or A/P provider[25] or workers who held a certificate from either an NA/NP or A/P provider.[26]

Exhibit 6: Percent with "No Long-term Career Plan"



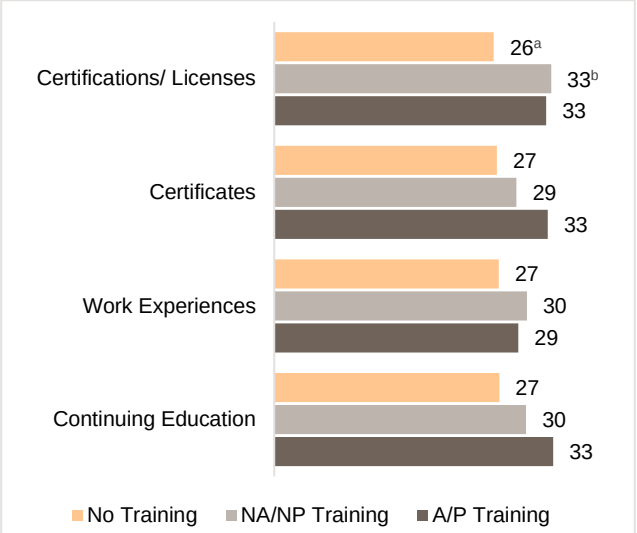
Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

Earnings

A strong trend emerged suggesting that earning were higher for non-degreed workers who completed post-secondary training programs (Exhibit 7). Because there was significant variation in reported experience levels within several of the training types, we compared annual earnings of workers after controlling for the number of years individuals had spent in their current occupation.

Across all training types, non-degreed workers with no post-secondary training reported lower average salaries than non-degreed workers with post-secondary training, but the only statistically significant differences were between non-degreed workers with no training and non-degreed workers who earned a certificate/license from an NA/NP provider.[27]

Exhibit 7: Mean annual earnings in $1,000s
(controlling for years in occupation)

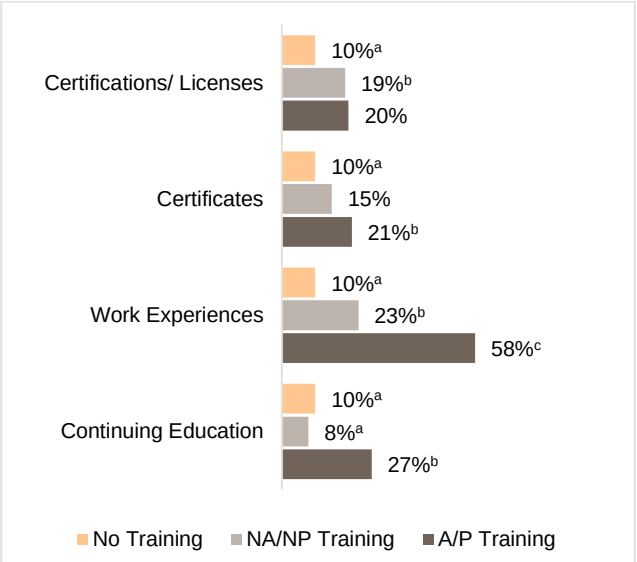


Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

Debt and Indebtedness

Although we found significant variations in the *proportion* of non-degreed workers with debt based on whether they had completed post-secondary training, there was almost no significant variation (and few discernable patterns) in the *amount* of debt among those reporting indebtedness.

Exhibit 8: Percent Reporting Debt from Training

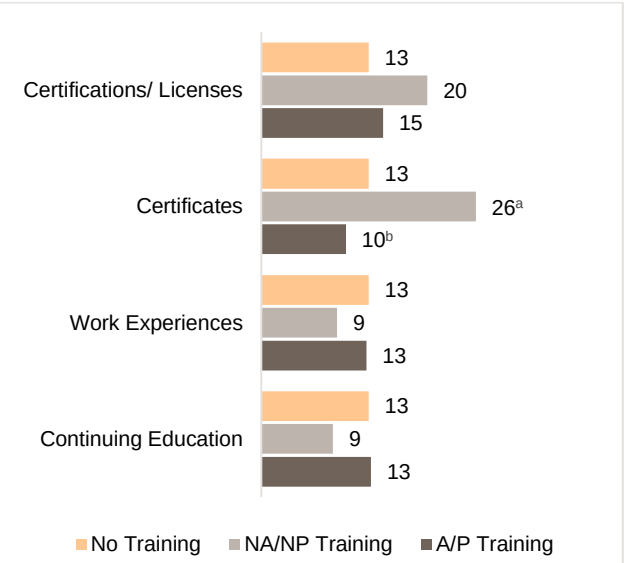


Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

As seen in Exhibit 8, for all training types, there were significant variations in the proportion of workers who reported having *any* debt associated with their training, with (as expected) a significantly smaller proportion of non-degreed workers with no post-secondary training reporting debt compared to those who had received training. This was true for all four training types,[28] with especially large variations for work training experiences.[29]

Surprisingly, however, **although there were significant variations in the proportion of non-degreed workers with debt, there was very little significant variation in the amount of indebtedness between those with and without training** (Exhibit 9). The only comparison that produced a statistically significant difference in debt levels was between workers who earned certificates from NA/NP institutions compared to those receiving certificates from A/P sources.[30] Debt levels for non-degreed workers did not significantly vary based on completion of other training types, whether from A/P or NA/NP providers.

Exhibit 9: Mean Debt from All Training, in $1,000s



Note: Within each type of training, estimates marked with different letters (e.g., a and b) are significantly different, $p<.05$.

DISCUSSION

This research sought to add to the body of knowledge about the prevalence and characteristics of different types of nontraditional training programs. Although much is known about traditional sources of training that are both accredited and portable, less information is available about the prevalence, characteristics, and potential outcomes associated with NA/NP programs.

Initially, our survey revealed that workers are more likely to engage in NA/NP work training programs; only 33-42% of trainings were provided by A/P sources. In other words, most workers reported securing training, not from public or private non-profit colleges or universities, but instead from sources such as for-profit colleges and companies, trade unions, professional associations, and non-profit organizations. Although some may have predicted that NA/NP trainings would be less valuable to workers than those from A/P providers, our study did not bear that out.

Our findings instead suggest that NA/NP providers may offer training that is comparable in many ways to A/P institutions. The A/P-status of the training provider was not a significant predictor of workers' overall satisfaction with training in our statistical models. Instead, satisfaction was driven by two other training factors: its usefulness and its applicability to the workers' current job. The preeminence of these factors is consistent with a central tenet of adult education: learning experiences should be highly relevant to the individual and personal needs of workers.[31]

Further, for those without a two- or four-year college degree, our findings suggest that NA/NP training may offer a reasonable path to job training. We found virtually no statistically significant differences in career outcomes of non-degreed workers who completed A/P rather than NA/NP training, as measured by the proportion holding full-time jobs, their average weekly hours or work, and their average annual earnings. Although we did find significant differences based on the A/P-status of training with regard to the proportion of non-degreed workers with debt, it was those who had completed A/P trainings who reported higher rates of indebtedness, with statistically significant differences for those completing work training experiences and continuing education.

Our findings also highlight several additional areas for future research. Most notably, we must continue to investigate what distinguishes "good" training programs from the "bad." This study looked specifically at the A/P-status of training providers, but numerous other factors could be play. For example, the efficacy of trainings conducted online is an issue of particular relevance during the pandemic; our research found that workers were significantly less satisfied with continuing education programs that were delivered online compared to those conducted in person. More detailed analyses, however, are warranted.

Our research also raises questions about the link between training and vocational discernment. Although we found that many more non-degreed workers without training reported having no long-term career goals, it remains unclear whether training programs help clarify an individual's career goals or if training is the result of vocational planning. We also need to see if similar patterns hold for workers with higher levels of formal education.

CONCLUSION

With the turmoil in the labor force caused by the COVID-19 pandemic, unemployed workers may be seeking avenues to retrain for other jobs.[6,7] Although some caution is needed to choose the right program, nontraditional paths to training can be a choice that will lead to favorable outcomes, providing workers with training that is relevant to jobs and that satisfy their training goals.

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ECMC Foundation

ABOUT NORC

NORC at the University of Chicago is an independent research organization headquartered in downtown Chicago with additional offices on the University of Chicago's campus, the DC Metro area, Atlanta, Boston, and San Francisco. NORC also supports a nationwide field staff as well as international research operations. With clients throughout the world, NORC collaborates with government agencies, foundations, educational institutions, nonprofit organizations, and businesses to provide data and analysis that support informed decision-making in key areas, including health care, education, economics, crime, justice, and energy. NORC's decades of leadership and experience in data collection, analysis, and dissemination—coupled with deep subject matter expertise—provide the foundation for effective solutions.

Appendix: Worker Satisfaction with Training: Summary of Logistic Regression Models by Training Type

	Certifications/ Licenses	Certificates	Work Experiences	Continuing Education
	(*n* = 673)	(*n* = 667)	(*n* = 484)	(*n* = 566)
DEMOGRAPHIC VARIABLES				
Gender: Woman (v. Man)			(+)*	(+)*
Race/Ethnicity: Black (v. White)	(+)**			
Race/Ethnicity: Hispanic (v. White)			(-)*	
Race/Ethnicity: Multiracial (v. White)			(+)**	
Negelekerke R^2 - Block	*.069***	*.050*	*.158****	*.061**
CAREER VARIABLES				
Employed Part-time (v. Full-time)		(+)**		
Underemployed: Yes (v. No)		(-)*		(-)*
Working Multiple Jobs: Yes (v. No)		(+)*		(+)*
Current Job Fulfills Career Goal (v. Not on Career Path)	(+)*			
Negelekerke R^2 – Block	*.041*	*.053**	*.053*	*.100****
TRAINING FACTORS				
A/P-Status of Training Provider: A/P (v. NA/NP)	*ns*	*ns*	*ns*	*ns*
Method: Online (v. In Person)†				(-)*
Breadth of Reasons for Training (0-8)			(+)**	(+)*
Usefulness of Training: Very (v. None/Some)	(+)***	(+)***	(+)***	(+)***
Applicability to Current Job: Very (v. None/Some)	(+)***	(+)***	(+)***	(+)***
Breadth of Difficulties with Training (0-5)		(-)**	(-)**	
Length of Training		(+)**		
Job with Employer (v. Self-employed)	(+)**		*n/a*	(+)*
Employer Required Training: Yes (v. No)	(-)*		*n/a*	(-)***
Employer Paid all Training Costs: Yes (v. No)	(+)*		*n/a*	
Received CBO Support: Yes (v. No/Don't know)	(+)*			
Negelekerke R^2 – Block	*.183****	*.175****	*.237****	*.317****
Negelekerke R^2 - Full Model	*.293****	*.278****	*.448****	*.478****
% Correctly Predicted by Full Model	*73.4*	*72.7*	*78.4*	*77.3*

Notes. Dependent variable = "Very satisfied" with most recent training experience (compared to *not at all satisfied* or *somewhat satisfied*). (+) indicates a statistically significant positive association; (-) indicates a statistically significant negative association; blank cells indicate that the independent variable was not significant in final model; *n/a* = variable not included in model; † = For work experiences, the method question asked whether the training program included time in a classroom, not whether it was conducted online or in person (this variable was non-significant).
Other variables included in all models were: Race/ethnicity: Asian and other, region, metropolitan area, age, educational level, time in career, recent professional development plan, 12-month earnings, any debt from training, and total number of completed trainings (all were non-significant for all training types)
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; *ns* = non-significant

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[11] Further information about the survey, the survey questionnaire, documentation, and public-use data will be posted on the NORC website: http://www.norc.org.

[12] χ^2 (2, n = 2290) = 36.267; p < 0.001; φ = .126.

[13] F (2, 1584) = 13.428; p < 0.001 ; η_p^2 = .017.

[14] χ^2 (2, n = 2277) = 28.520; p < .001; φ = .112.

[15] χ^2 (2, n = 2290) = 19.161; p < .001; φ = .091.

[16] χ^2 (2, n = 2290) = 65.022; p < .001; φ = .169

[17] χ^2 (2, n = 2290) = 26.215; p < .001; φ = .107.

[18] χ^2 (2, n = 2290) = 66.506; p < .001; φ = .170.

[19] The survey specifically defined continuing education as "*non-credit* … classes at a college or university for your job or career" (emphasis added). Because it was by definition *non-credit*, all continuing education was considered non-accredited or non-portable (NA/NP), but a large proportion (42%) of the continuing education experiences was delivered by an A/P *provider* (i.e., public or non-profit institution of higher education).

[20] χ^2 (4, n = 778) = 55.877; p < .001; φ = .190.

[21] χ^2 (4, n = 589) = 54.763; p < .001; φ = .216.

[22] χ^2 (2, n = 762) = 20.353; p < .001; φ = .163.

[23] F (2, 245) = 8.672, p < .001, η_p^2 = .039. In addition, non-degreed workers with a certification/license from an NA/NP source also reported significantly higher weekly hours (39.23) compared to those with no training.

[24] F (2, 459) = 8.857, p < .001, η_p^2 = .037.

[25] χ^2 (6, n = 495) = 12.676, p = .048, φ = .113.

[26] χ^2 (6, n = 540) = 16.614, p = .011, φ = .124.

[27] F (2, 412) = 5.169, p = .006, η_p^2 = .024.

[28] For certificates/licenses: χ^2 (2, n = 503) = 9.176, p = .010, φ = .135; for certificates: χ^2 (2, n = 546) = 9.062, p = .011, φ = .129; for continuing education: χ^2 (2, n = 406) = 17.942, p < .001, φ = .210.

[29] χ^2 (2, n = 397) = 38.104, p < .001, φ = .310.

[30] F (2, 66) = 5.105, p = .009, η_p^2 = .133. (These amounts did not significantly vary from the amount of indebtedness of workers with no degree and no training, about $13,000)

[31] Knowles, M. S., Holton, E. F., III., & Swanson, R. A. (2015). *The adult learner: The definitive classic in adult education and human resource development* (8th ed.). Routledge.