

ESTABLISHING AND SUSTAINING YOUR CYBER WORKFORCE THROUGH YOUTH REGISTERED APPRENTICESHIP

An apprenticeship is a structured opportunity that pairs paid employment with meaningful career-related education and training. This guide explores the benefits, challenges, and innovative strategies required to build or expand a registered apprenticeship program in cybersecurity.

In celebration of 2020 National Apprenticeship Week, the Cybersecurity Youth Apprenticeship Initiative (CYAI) organized a Twitter chat to provoke discussion and encourage knowledge- and resource-sharing amongst thought leaders and practitioners in the youth apprenticeship community. To celebrate National Cyber Careers Awareness Week (a separate commemoration that was recognized the same week in 2020), CYAI hosted a webinar to explore why cybersecurity is critical for every industry. This handout recaps information shared during both events. Access a complete archive of the chat via [#YAChat](#) on Twitter. [Stream the webinar](#) recording on YouTube.



THE BENEFITS OF YOUTH REGISTERED APPRENTICESHIP PROGRAMS

Youth apprenticeship connects the learning needs of students to employers' business needs. By integrating on-the-job training and classroom learning, youth apprenticeship ensures successful careers in high-paying, high-demand industries.¹ Through this hybrid approach, apprentices not only learn technical skills, but also cultivate their soft skills that are needed for daily interactions in the workforce. Furthermore, by integrating school and work, youth apprenticeship can keep students from falling in the gap between education and employment.²

Apprenticeship programs provide an “earn as you learn” experience, while an internship typically provides a temporary “learn before you earn” experience. Apprenticeship programs promote equity as they provide opportunities for youth who cannot afford to take an unpaid internship. At the close of an internship, interns leave the organization, oftentimes with sensitive information that is then shared with their next employer. Apprenticeship programs range from one to six years, which ensure that employers retain employee talent as well as curb the distribution of company-specific information.



Employers develop a more robust talent pipeline, access a diverse and innovative labor pool, can earn a reputation for being a great place to work, and boost business prospects.³

1. Kreamer, K. B., Zimmermann, A., Cahill, C., Girardi, A., Denney, A., Derner, S., and Klein, S. (2017). Opportunities for Connecting Secondary Career and Technical Education (CTE) Students and Apprenticeship Programs (Rep.). Retrieved from: careertech.org/resource/connecting-secondary-cte-and-apprenticeships
2. Lerman, R. I., and Packer, A. (2015). Youth Apprenticeship: A Hopeful Approach for Improving Outcomes for Baltimore Youth (Rep.). Retrieved from: urban.org/sites/default/files/alfresco/publication-pdfs/2000217-Youth-Apprenticeship.pdf
3. Seleznow, E. M., and Ward, C. (2020). The Business Case for Work-Based Learning. Retrieved from: jff.org/what-we-do/impact-stories/corporate-leadership/corporate-advisory-services/business-case-work-based-learning/





PARTNERS

Successful apprenticeships are the result of collaboration. It is critical to create and leverage partnerships to identify resources needed to build a RAP and recruit potential apprentices.

The needs of **employers** drive the apprenticeship program. Employers provide on-the-job experience and mentorship for apprentices.

The skills and needs of the **youth apprentices** are central to an effective program design that equips the youth apprentices to successfully do their job.

K12 & post-secondary education providers design and deliver complementary curricula.

Stakeholders often have deep community connections and investments. Stakeholders may include state workforce boards, community and faith-based organizations, government agencies, or intermediary organizations.

Programs that are registered with the U.S. Department of Labor may access federal resources, state tax credits, national credentials, and technical assistance.



@CYAI2024



@CYAI2024



CYAI2024.org



CYAI2024@icf.com

LEVERAGING

Education Partnerships to Prioritize Cybersecurity

Recruiting youth and securing parental support can be a barrier to sustaining a successful cybersecurity apprenticeship program. Partnering with K12 and postsecondary institutions is a great way to reach these communities to get youth started on the path to a career in cybersecurity.

Secondary level

- Build a pipeline to your registered apprenticeship program. Work with teachers and administrators to start a school club that introduces cybersecurity and builds interest.
- Meet with administrators to discuss ways to add cybersecurity curriculum to the selection of electives.

Post-secondary level

- Partner with community colleges to create K12 courses that align with necessary training and education needed for your registered apprenticeship program.
- Create pathways for dual enrollment and credit articulation to provide options for youth that meet their needs.



CHALLENGES & SOLUTIONS

As with any program development process, employers may encounter challenges to building or expanding a registered apprenticeship program. These common scenarios and the strategies to resolve them will help ensure successful program development and implementation.



Recruiting Youth

Partner with K12 and postsecondary partners to identify which students have aptitude and interest in different career paths.



Collecting high quality enrollment and outcomes data

Prioritize accurate and reliable data collection at the organizational level to ensure continued growth and improvement of the program. Leverage existing data collection mechanisms that may be available in statewide longitudinal data systems.⁴



Securing Parental Support

Share employment data and wage statistics and demonstrate how apprenticeship can connect to long-term education.⁵



Delivering quality registered apprenticeships programs

Review organizational strengths and areas for development during the planning.⁶



Youth access to Transportation

Provide a stipend to pay for bus, subway, rideshare, or gas.



School seat time and attendance policies

Advocate for a policy change that grants flexibility for apprentices.



Finding Support and Examples

Contact your statewide workforce investment board to connect with other employers that host registered apprenticeship programs.

4. Advance CTE. (2019). The Role of Data and Accountability in Growing Youth Apprenticeship Programs (Rep.). Retrieved from: careertech.org/resource/youth-apprenticeship-data

5. New America and Partnership to Advance Youth Apprenticeship (PAYA) (2019). Self-Assessment and Planning Tool for Youth Apprenticeship Programs. Retrieved from: jff.org/resources/self-assessment-and-planning-tool-for-youth-apprenticeship-programs.

6. Di Bonaventura, J. (2018). 5 Reasons You Should Think about Apprenticeship for Your Child. Retrieved from: jff.org/what-we-do/impact-stories/center-for-apprenticeship-and-work-based-learning/5-reasons-you-should-think-about-apprenticeship-your-child.



ENSURING EQUITY

In Registered Apprenticeship Programs

Prioritize equity during recruitment. Make deliberate choices about the secondary schools contacted for recruitment to ensure that participation reflects the demographics of the region.⁷ Customize marketing to effectively reach different demographics within communities.

Involve a racially and economically diverse coalition of women, first-generation apprentices, and other leaders in the policy development and implementation of programming.⁸

Review education and workforce practices, policies, and systems to identify embedded inequities. Develop targeted strategies to address and dismantle them.⁹

Create pre-apprenticeship programs to prepare youth for an apprenticeship. Use test results to determine where youth need additional support.¹⁰

Commit to data collection for continuous improvement. Explore the demographics of apprentices and any differences in advancement and completion by gender, race, or ability.¹¹



Acknowledge implicit biases and barriers that may prevent youth from accessing the economic opportunities available to them.¹² For example, a program's transportation or equipment could be cost prohibitive for some.

7. Cunningham, J., & Jackson, A. (2020, October 05). How Businesses Can Recruit and Develop More Young People of Color. Retrieved from: hbr.org/2020/10/how-businesses-can-recruit-and-develop-more-young-people-of-color.
8. Dresser, L., Mackey, M., & Young-Jones, M. (2016). Principles for Equity in Apprenticeship. Retrieved from equityinapprenticeship.org/case-studies/principles-for-equity-in-apprenticeship.
9. The National Alliance for Partnerships in Equity. (2020). Advancing Equity in and Through Youth Apprenticeship. Retrieved from: newamerica.org/education-policy/edcentral/advancing-equity-and-through-youth-apprenticeship.
10. Allen, L., Cahill, C., Kobes, D., Seleznow, E. M., & Sullivan, M. M. (2019). JFF's Framework for a High-Quality Pre-Apprenticeship Program. Retrieved from: jff.org/resources/jffs-framework-high-quality-pre-apprenticeship-program.
11. Williams, B., PhD. (2019). Equity in Youth Apprenticeships: Access, Inclusion, and Continuous Improvement. Retrieved from newamerica.org/education-policy/edcentral/equity-youth-apprenticeships-access-inclusion-and-continuous-improvement/
12. Toglia, J. (2020). Diversifying Apprenticeship: Acknowledging Unconscious Bias to Improve Employee Access (Rep.). Retrieved from: jff.org/resources/diversifying-apprenticeship-acknowledging-unconscious-bias-improve-employee-access.





ADAPTING APPRENTICESHIP For Covid-19 and Beyond

Employers

can rethink the role of youth in the workplace.

Youth

are often highly adaptable to change and can bring new resources and sustainability ideas to the business.

Programs can:

- Provide services remotely.¹³
- Pause some program delivery.
- Adapt programs to meet critical needs.¹⁴
- Use this time to regroup and plan.¹⁵

Resources to Get Started

- High School Apprenticeships: A Guide for Starting Successful Programs by Advance CTE.
- What is Youth Apprenticeship? Definition and Guiding Principles for High-Quality Programs by New America.
- Federal Resources Playbook

13. U.S. Department of Labor (2020). COVID-19 Frequently Asked Questions: Apprenticeship Grants. Retrieved from: dol.gov/agencies/eta/coronavirus#apprenticeship

14. Hwang, J. and White, T. (2020). Youth Apprenticeship Programs Adapt to Meet Crucial Needs in Pandemic. Retrieved from: newamerica.org/education-policy/edcentral/youth-apprenticeship-programs-adapt-meet-crucial-needs-pandemic

15. Jobs for the Future (2020). How Apprenticeship Programs for Opportunity Youth Stay Resilient Through the COVID-19 Recession. Retrieved from: jff.org/resources/how-apprenticeship-programs-opportunity-youth-stay-resilient-through-covid-19-recession



CYAI

Let us assist you with developing or expanding your registered apprenticeship program in cybersecurity.

MARCH 2021

Pursuant to the National Apprenticeship Act, the Department of Labor works to expand opportunities related to apprenticeship programs. This project has been funded, either wholly or in part, with Federal funds from the Department of Labor, Employment & Training Administration under the contract number/work order DOL-OPS-16-A- 0012/1605DC-18-F-00060. The contents of this publication do not necessarily reflect the views or policies of the Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement of same by the U.S. Government.



@CYAI2024



@CYAI2024



CYAI2024.org



CYAI2024@icf.com