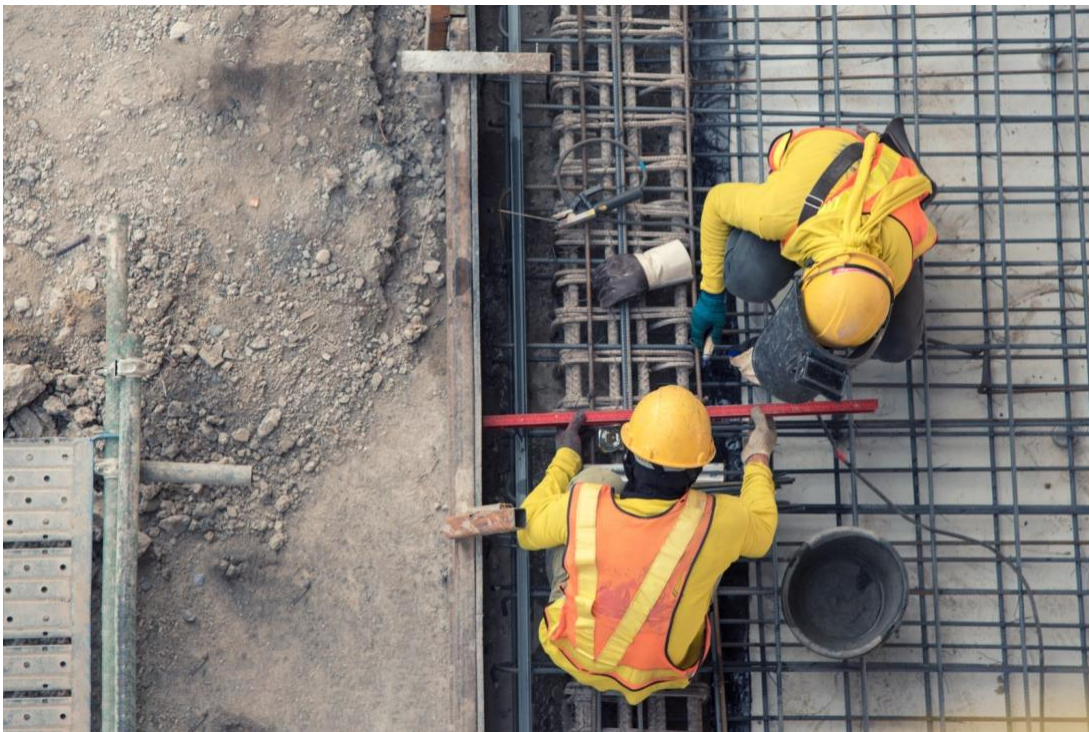


THE WILLIAM D. RUCKELSHAUS CENTER

UNIVERSITY OF WASHINGTON

Situation Assessment of Pathways to Higher Education Credentials and Funding for Apprenticeships



Prepared for the Washington State Legislature
by the **William D. Ruckelshaus Center**



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TABLE OF CONTENTS

I. EXECUTIVE SUMMARY4

II. INTRODUCTION7

III. BACKGROUND AND CONTEXT9

IV. INITIAL PARTICIPANT PERSPECTIVES14

V. KEY AREAS OF AGREEMENT, DISAGREEMENT, AND MIXED PERSPECTIVES.....

 A. KEY AREAS OF AGREEMENT.....27

 B. KEY AREAS OF DISAGREEMENT.....27

 C. ISSUES CHARACTERIZED BY COMPLEXITY AND MIXED PERSPECTIVES27

VI. INTERVIEWEE IDEAS28

 A. GENERAL IDEAS.....28

 B. POLICY IDEAS.....29

 C. OPERATIONAL IDEAS.....30

 D. FUNDING IDEAS30

VII. PAST EFFORTS TO ADDRESS ISSUES32

VIII. RECOMMENDATIONS FOR THE COLLABORATIVE PROCESS.....33

IX. CONCLUSION & NEXT STEPS.....37

X. APPENDICES38

 APPENDIX A: ASSESSMENT PROCESS38

 APPENDIX B: LIST OF PARTICIPANTS40

 APPENDIX C: GLOSSARY42

 APPENDIX D: ACRONYMS44

 APPENDIX D: BIBLIOGRAPHY46

 APPENDIX F: INFORMATION ABOUT THE RUCKELSHAUS CENTER.....47

 APPENDIX G: WORKING WITH THE RUCKELSHAUS CENTER48

I. Executive Summary

The William D. Ruckelshaus Center (the Center) conducted this situation assessment in response to Senate Bill (SB) 5764 (2022), to understand and document the perspectives of key interested parties, identify areas of agreement and disagreement, and make recommendations for a successful collaborative process. SB 5764 directs the Washington Student Achievement Council to contract with the Center to carry out research, evaluation, consultation with interested parties (a collaborative process), and reporting to develop opportunities for apprentices to receive credit toward degrees, as well as to make recommendations to the legislature on a sustainable funding model for apprenticeship. The legislation outlines a five-year process, beginning in 2022 and ending in 2027.

This report fulfills the Center's Year 1 deliverable in this five-year process. It provides an overview of the landscape of apprenticeship and higher education accreditation in Washington, documents different perspectives, and highlights issues that need to be addressed to implement SB 5764.

The report also provides recommendations pertaining to the collaborative process among the interested parties identified in SB 5764, in which the participants will develop recommendations to meet the policy goals of the legislation. At this early stage of the five-year process, the situation assessment reveals areas of agreement and disagreement, as well as tensions and concerns raised. The assessment will inform the design and facilitation of the upcoming collaborative process. As the collaborative process unfolds, subsequent reports will elaborate on current and emerging issues as the parties discuss them and provide ways to address those issues including mechanisms for implementation.

The assessment team conducted a total of 56 interviews with 61 people representing a broad and balanced range of interests (listed in [Appendix B](#)) representing organizations with an interest in apprenticeship and higher education, including those listed in SB 5764.

Initial Participant Perspectives

Interviewees said the building and construction trades comprise between 80 and 85 percent of apprenticeships in Washington State, with union-sponsored apprenticeships accounting for most apprentice registrations. Many participants mentioned the stigma associated with apprenticeship, saying it often gets framed as a "Plan B" for students who couldn't make it in (or into) college.

Several interviewees pointed out that, outside of the apprenticeship community, most people do not really know what an apprenticeship is and how it works. In addition, those who might have interest in an apprenticeship may not have many opportunities to learn about it.

Participants explained that apprenticeships have expanded in recent years into nontraditional occupations outside of the building and construction trades, including in sectors once accessed only through higher education, such as in healthcare, K-12 education, maritime, information technology (IT), aerospace manufacturing, government administration, and cosmetology.

Several interviewees said that women and people of color are underrepresented in apprenticeships, particularly in the construction and building trades. According to the Washington State Apprenticeship and Training Council, 13 percent of apprentices in the state are women and 66 percent are White. According to data from the state's Office of Financial Management, the percentage of the state's population that is White, non-Hispanic, is estimated to be 63.5 percent in 2020. To address disparities within specific apprenticeship programs, several interviewees spoke of the importance of ongoing efforts to recruit women and people of color into apprenticeship programs.

Participant Perspectives on Higher Education and Apprenticeship

Interviewees pointed out that Washington State's higher education and state-registered apprenticeship systems are quite different, noting that the two systems do not have the same mission and goals. Several interviewees expressed interest in the potential for the public and policymakers to view apprenticeship and higher education as different but equal, as in other countries like Switzerland and Germany, where apprenticeship and higher education pathways are more integrated. Others felt it would be hard to replicate their approach here, because of social, economic, and political differences.

Washington State's 34 community and technical colleges (CTCs) each have their own policies for articulating credits for prior learning; no "one size fits all" policy exists at this point that could work across the entire state. The state's apprenticeship system is likewise diverse and decentralized, with nearly 220 programs across industries and sectors that have different requirements for completion. Apprenticeship completion depends on years and hours served, while the higher education system is based on credits and quarters or semesters completed.

The state's higher education and apprenticeship systems intersect primarily around the provision of related supplemental instruction (RSI) for apprentices at CTCs. Each CTC negotiates contracts with apprenticeship sponsors to provide some combination of credit, space for instruction, and/or RSI. Some CTCs also have agreements with specific apprenticeship programs to create degree pathways, most notably the Multi-Occupational Transfer (MOT) degrees. Many, but not all, interviewees expressed dissatisfaction with the current arrangement, primarily related to funding.

A few interviewees questioned the value of higher education degrees as compared to apprenticeship. Other interviewees expressed concern that the emphasis on alternative career pathways sometimes has the effect of giving the message that baccalaureate and associate degrees are not important, even as recent research by the Washington Roundtable anticipates employer demand for employees with degrees to remain strong. Interviewees generally agreed that demand for degrees among apprentices is low.

Participant Perspectives on the K-12 System and Apprenticeship

Several respondents said K-12 educators think of, and present, apprenticeship and higher education as separate systems, although that is not always the case. Interviewees noted that while relatively few counselors and educators talk about apprenticeships, those who do may not know, or do not highlight, the fact that apprenticeship can lead to both 2-year and 4-year degrees.

Participant Perspectives on Credit for Apprenticeship RSI

Between interviewees involved in academia and those in apprenticeship, very different perspectives emerged about how and even whether credit should be given for apprenticeship RSI. In addition, the sheer numbers of apprenticeship programs and institutions of higher education can make credit articulation complicated, with each program and institution doing things differently, as discussed above.

Most RSI in Washington State occurs outside of the CTC system by instructors hired by the apprenticeship training provider, according to respondents. They noted that because colleges do not provide the faculty in these cases, they find it hard to ensure sufficient standards for the things they must manage, such as academic rigor and course content. In addition, some interviewees said that institutional accreditation standards and federal requirements for student aid create barriers to making credits more transferable.

Participant Perspectives on Crediting On-the-Job Training

Several interviewees expressed interest in granting credit for apprentices for on-the-job training (OJT). Most interviewees at higher education institutions felt that articulating OJT to academic credit would be difficult, if not impossible. However, several Washington higher education institutions currently grant credit toward degrees to journeyed apprentices.

Participant Perspectives on Apprentices' Knowledge and Understanding of Credits and Pathways

Most apprenticeship training is provided through an apprenticeship training agent, by a journeyed instructor not affiliated with a CTC, and does not happen on a CTC campus, according to interviewees. Apprentices in these programs may not know of existing options for higher education credit. Several interviewees reported that many apprentices do not know their RSI is earning them college credit. Similarly, some said, many apprentices may not know that they are enrolled in a CTC and are eligible for the support services and benefits available to other CTC students. Multiple respondents emphasized how helpful those support services and benefits could be for apprentices if they knew about them.

Participant Perspectives on Transferability of Credits and Degrees

Interviewees said having transferable college credit attached to apprenticeship coursework would give apprentices more options and pathways; by contrast, several interviewees felt strongly that terminal degrees, particularly terminal associate degrees, which do not transfer to four-year colleges, do not hold a great deal of value for either apprentices or employers. The overwhelming majority of apprentices do not pursue higher education degrees, according to many interviewees.

Participant Perspectives on Funding for Apprenticeship RSI

Funding for apprenticeship RSI in the CTC system is a divisive issue. CTCs and apprenticeship programs seem to lack knowledge about and understanding of each other's finances, resulting in mistrust. One interviewee described a lack of transparency about cost on both sides. Many interviewees cited two key issues tied to the mistrust: the removal of the full-time equivalence (FTE) allocation set-aside for apprenticeship by the legislature in 2012-2013 and the 50 percent tuition waiver for apprenticeship RSI.

Participant Perspectives on the WCG-A (Washington College Grant-Apprenticeship)

Apprentices' utilization of the WCG-A (created in 2019) has been lower than anticipated, according to several interviewees, primarily because of limited administrative capacity. To improve apprenticeship programs' access to WCG-A funds, WSAC contracted this year with the nonprofit ANEW to serve make WCG-A funds available to apprentices enrolled in programs that are not approved to manage the funds.

Interviewee Ideas

Interviewees provided many constructive ideas to address issues raised during the situation assessment that will likely arise during a collaborative process. These ideas, documented below, offer potential for common ground or starting points for generating solutions that could meet the needs of all interested and affected parties.

Recommendations for a Collaborative Process

Based on the perspectives, issues, and ideas raised by interviewees, the Ruckelshaus Center developed preliminary recommendations for a collaborative process for consideration by the legislature and other interested parties. For details, see [section VIII](#).

II. Introduction

The William D. Ruckelshaus Center (the Center) conducted this situation assessment in response to Senate Bill (SB) 5764 (2022), to understand and document the perspectives of key interested parties, identify areas of agreement and disagreement, and make recommendations for a successful collaborative process. SB 5764 (2022) directs the following:

- The State Board for Community and Technical Colleges must provide access to the Washington College Grant for Apprenticeships to eligible apprentices through the financial aid of the colleges where the apprentices are receiving related supplemental instruction.
- The Washington Student Achievement Council must contract with the Center to carry out research, evaluation, consultation (a collaborative process) with interested parties, and reporting to develop opportunities for apprentices to receive credit toward degrees, as well as to make recommendations to the legislature on a sustainable funding model for apprenticeship. The legislation outlines a five-year process, beginning in 2022 and ending in 2027. The December 1, 2026 report from WSAC to the legislature must recommend viable policies for degree pathways for people who complete a state-registered apprenticeship program. (For the purposes of this report, a collaborative process is defined as a solution-focused dialogue among key interests, convened willingly and facilitated by an impartial facilitator.)
- The Washington State Training and Apprenticeship Council (WSTAC) shall explore and recommend whether the state should establish an institution or centralized program for apprentices to receive related supplemental instruction for credit toward a degree.
- A policy must be established at public institutions of higher education for granting as many credits for an apprentice's related supplemental instruction as possible and appropriate for state-registered apprenticeship programs registered on or before July 1, 2022, by the 2028-2029 academic year.

As one of the Center's first deliverables in a five-year process, this report provides an overview of the landscape of apprenticeship and higher education accreditation in Washington, as well as the perspectives and issues that need to be addressed to implement SB 5764 (2022).

A situation assessment is a first step to identify the key issues needing to be addressed to implement SB 5764 and to provide the focus for a collaborative process among key interested parties. The assessment reveals useful information about the issues and the parties that helps to inform next steps, including how best to structure the collaborative process for success. Part of this process involves reflecting back the views and opinions of interviewees. While the Center provides some facts, which are cited, it also provides the opinions of interviewees to ensure that all parties understand the range of views and issues among the interested parties. The collaborative process can help to build trust and address misperceptions and misunderstandings over time.

In keeping with the focus on views of respondents, the situation assessment report does not provide policy recommendations, only recommendations for issues to be addressed in the collaborative process. At this point in the process, the situation assessment reveals areas of agreement and disagreement, as well as tensions and concerns raised. The situation assessment is used to inform the upcoming collaborative process.

The assessment team selected an initial round of interviews representing a broad and balanced range of interests. Based on suggestions from these interviewees, the Center conducted a second round of interviews. The assessment team conducted a total of 56 interviews with 61 people (listed in Appendix

B). The list is not meant to be exhaustive but rather to include a balance, with representation from each significant category of interested constituency. The goal is for all interested parties to feel that their perspective was included in the assessment, whether they themselves were interviewed or not. The assessment team then synthesized information from the interviews and tallied responses on key issues.

The assessment team included Tye Ferrell, Lead Facilitator, who led the interviews and drafting of this report, with significant input and contributions from Chris Page, Senior Facilitator, and Matt Joyce, Project Coordinator. Phyllis Shulman, Associate Director of the Ruckelshaus Center, provided oversight. The Center contracted with Education Northwest, a research firm in Portland, Oregon, for additional capacity and targeted identification of best practices in apprenticeships and credentialing from other states and nations. A report from Education Northwest is provided separately to inform participants in the collaborative process and respond to SB 5764 (2022). For more information on the team, methodology, and protocols used for this assessment, please see [Appendix A](#).

III. Background and Context

Washington State Senate bills (SB) 5764 and 5600, passed in 2022, show the legislature’s interest in encouraging and fostering apprenticeship opportunities and for expanding higher education pathways for apprentices. SB 5600 also seeks to open opportunities to “diverse groups and communities that have not been able to access traditional higher education and traditional apprenticeship programs in the past.” This interest comes at a time when the number of registered apprentices in the state is at an all-time high.

The Center, with support from Education Northwest, reviewed recent literature relevant to apprenticeship and higher education. This section draws on that research to present some national context and discussion among researchers about the connections between the apprenticeship and higher education systems and the potential for better integrating them. The opinions or positions expressed are not those of the Ruckelshaus Center or Education Northwest. They are provided to give a sense of national topics of discussion and advocacy, as well as provide some of the context in Washington State.

In the literature, several overarching national themes emerged:

1. Bachelor’s degrees continue to be seen as the most desirable postsecondary credential by policymakers and the public. At the same time, whatever credential is earned must be relevant in the workforce.
2. There is a need and opportunity to improve the public perception of apprenticeship, which offers the potential to address labor shortages in critical sectors of our economy, but suffers from a lingering stigma as a less-desirable career pathway.
3. Other countries, such as Switzerland, Germany, and the United Kingdom, have increased the utilization of apprenticeship by creating dual systems of learning that deeply integrate apprenticeship, K-12, and higher education pathways and systems. However, while these other countries offer examples of how to increase apprenticeship utilization, their social, political, and economic systems differ significantly from those in the U.S.
4. For the U.S. and individual states to increase the use of apprenticeship as a career pathway, it will be important to better integrate higher education and apprenticeship pathways.
5. Increased integration of higher education and apprenticeships would likely require a major reorganization of systems of K-12 and postsecondary education and apprenticeship.
6. Community and technical colleges will be important players in any efforts to better integrate higher education and apprenticeship in the United States.

Annelies Goger of the Brookings Institution (2020) makes the case that Covid-19 and the changing nature of work, in addition to structural racism and globalization, are major disruptors of our economy, and that our education and labor market support systems have not kept up. She says that New Deal-era policies and programs codified racial and gender inequities in the labor market that persist to this day.

The United States is unique among industrial countries in relying so heavily on higher education as a career path, says Daniel Decker, Executive Vice President of Laurel Technical Institute in Pennsylvania (Decker, 2019). Most Americans (69 percent), Goger says, do not have a [4-year] college degree and large racial disparities exist in degree attainment rates. Still, a college degree remains the dominant and most sought-after occupational pathway.

According to Goger, alternatives to the college degree have proliferated to fill the need for additional career pathways, but this has resulted in a “confusing and chaotic landscape of credentials and

programs,” where both “workers and employers struggle to understand quality levels and qualification levels to make informed choices about the value of these offerings.” In particular, unaccredited programs, she says, limit the ability of learners to show how their learning has advanced or to easily transfer some of that learning to different occupational pathways.

Employers, Goger notes, underinvest in training and have little authority over school-based programs’ curricula, content, or quality. She points to the potential for a training system with multiple pathways for career mobility, including earn-and-learn training that provides “a paid route to a college degree and lifelong learning rather than a separate and unequal track away from it.”

Decker (2019) says that while two-thirds of occupations require post-secondary education and training, almost half of future job growth will require less than a four-year degree. These are classified as “middle-skill” jobs and their pathways “include some of our most needed sectors, including STEM, healthcare, and business.” Apprenticeships are one potentially important pathway to those middle skill jobs. “Apprenticeship programs...in the United States...” says Diane Auer Jones, Vice President for External and Regulatory Affairs at the for-profit Career Education Corporation (2011), “are vastly underused, poorly coordinated, non-standardized, and undervalued by students, parents, educators, and policymakers.”

An apprenticeship is a type of job training that combines on-the-job training (OJT) with structured instruction in a classroom, online, or at a job site. A *registered apprenticeship* is registered with and overseen by the U.S. Department of Labor’s Office of Apprenticeship or a State Apprenticeship Agency and must meet certain quality standards (U.S Department of Labor, n.d.). Apprenticeships were widely used in the United States historically and an important part of the country’s early economic development. Over time, apprenticeship declined as other forms of workforce education and training became popular, according to Decker (2019).

Auer Jones (2011) and Decker (2019) see a need to improve the public perception of apprenticeship, develop pathways to allow apprentices to easily apply their credential toward a degree, and ensure credit transferability. In Germany and Switzerland, Auer Jones says, apprenticeships are integrated into the secondary school system and most students finish an apprenticeship even if they plan to pursue a postsecondary degree. In the U.S., she says, people view apprenticeships as labor programs more than education programs.

A New America report by Alice McCarthy and other researchers (2017) note that:

“In the United States, apprenticeship and higher education have evolved separately, each with their own traditions and cultures. They have also developed distinct policy approaches for regulating, financing, and designing the programs they deliver. These policies, in turn, reinforce the distinctions between the two systems, making it difficult for apprentices to earn college credit for what they learn and arduous for colleges to register apprenticeship programs and embed the financial models necessary to integrate them into degree tracks. The United States has never cultivated a dual education system that links learning in school and in work. Doing so will require significant changes to policy and practice across multiple domains.

“A critical first step in building those connections is to create more opportunities for individuals to participate in both systems at the same time—to be both a college student and an apprentice. In countries with strong dual education systems, the connection between schools and apprenticeship is seamless...In contrast, the roles of “apprentice” and “student” rarely overlap in the United States.”

National Apprenticeship Funding and Data

McCarthy (2017) notes the essential role that labor-management funds (also known as joint-training funds) have played since the 1930s in financing apprentice instruction and coordinating it between employers, educators, and apprentices. Joint-training funds work by pooling financial contributions from both union members and employers to support training costs such as equipment and instructors. However, as union membership has declined, McCarthy says, so have labor-management joint-training funds, which are found mostly in the building trades and manufacturing.

As more industries and occupations begin to utilize apprenticeship models, McCarthy (2017) says, other kinds of intermediary organizations are needed to fill the gap left by the decrease in joint-training funds. In Washington State, some examples of these organizations include Career Connect Washington, Apprenti, the Aerospace Joint Apprenticeship Committee, and the SEIU Healthcare 1199NW Multi-Employer Training Fund. In addition, to increase the “number and diversity of qualified applicants to apprenticeship programs,” Auer Jones says that there is also a need to provide pre-apprenticeship training, which other organizations can help to fill.

McCarthy (2017) says that few states are investing directly in apprenticeships. “A small number [including Indiana have] pursued strategies similar to the ‘skills levy’ approach in the United Kingdom, in which employers pay into a national training fund that they can use to support the costs of apprenticeship or other types of workforce training.”

Targeted tuition waivers, such as those used in Washington, can limit the expansion of dual higher education/apprenticeship programs by discouraging community college investment, McCarthy (2017) notes. However, she goes on, “When colleges are direct [apprenticeship] sponsors, rather than merely providers of related instruction, they may be motivated to expand apprenticeship programs into fields that now require college degrees for entry or advancement.”

McCarthy (2017) says that there are risks for institutions of higher education in accrediting apprenticeship learning, because they are accountable to multiple parties for ensuring the integrity of their degrees, including accreditors, state agencies, and the public. They also have few financial incentives to credit learning they have not delivered, such as an apprentice’s on-the-job learning or related supplemental instruction (RSI). In addition, it is expensive for colleges to integrate on-the-job learning with a degree program. They have to develop or evaluate the curricula, have methods in place to assess learning, and figure out how the apprentice’s learning fits into the courses they have designed for the specific degree program. Finally, the numbers of apprentices coming to institutions of higher education, primarily community and technical colleges, tend to be small. Many apprenticeship programs have only a handful of students. Classes are more cost effective for a college when there are more students paying tuition per class.

A few colleges, such as the Community College of Philadelphia, have managed to create integrated apprenticeship degree programs that give credit for on-the-job learning. With the help of external funders, they recruited 36 apprentices working across more than 20 employers for an Associates of Arts in Early Childhood Education program, according to McCarthy (2017).

The lack of data about apprenticeships, such as outcomes after program completion and the number of apprentices enrolled at institutions of higher education, is cited as a barrier to integration of higher education and apprenticeship by Auer Jones (2011) and McCarthy (2017). As McCarthy says, “...if a state wanted to encourage the community college system to create degree pathways for apprenticeship programs, it could establish financial rewards for colleges that graduate apprentices. First, however, the

colleges and the policymakers need to know who those students are.”

The National Community College Context

In a report on apprenticeships and community colleges, Jorge Klor de Alva and Mark Schneider of the American Enterprise Institute (2018) note challenges facing community colleges, such as declining enrollments and competition from private sector providers, but say that despite these challenges, “community colleges are central to how this nation now delivers its career and technical education.” Nevertheless, they say, state leaders would need to implement systemic reforms to enable community colleges to play a more active role in expanding apprenticeship to fill critical job market needs.

Washington State Context

Registered apprenticeships and higher education, whether two or four-year degrees, are typically perceived as distinct career pathways. However, there’s growing interest among policymakers in better integrating apprenticeship and higher education in Washington to provide more opportunities for young people, develop workforce in emerging occupations, and to increase pathways for apprentices to earn both associate and bachelor’s degrees. This interest gained momentum in 2017 during a four-day trip by Governor Jay Inslee and a 45-member state delegation to Switzerland, to study their apprenticeship system. That delegation included representatives of business, labor, education, philanthropy, and state government.

On his return, the Governor supported the creation of Career Connect Washington (CCW), a nonprofit organization charged with moving the state toward the Swiss model. CCW’s initial goal was to connect 100,000 students with career-connected learning opportunities that prepare them for high-demand, high-wage jobs, over five years (Washington Governor’s Office, 2017).

A wide range of other organizations in Washington play a role in apprenticeship and higher education, including state agencies such as the departments of Labor and Industries, Commerce, State Board of Community and Technical Colleges, Washington Student Achievement Council, Office of the Superintendent of Public Instruction, Workforce Training and Education Coordinating Board; as well as organized labor, business, nonprofits, joint apprenticeship training committees of labor and industry, Centers of Excellence connecting industry and community and technical colleges, four-year public and private colleges, pre-apprenticeship training providers, and community and technical colleges.

Today, more than 5,000 employers in Washington participate in almost 220 apprenticeship programs across nearly 250 occupations, employing around 22,000 apprentices (Washington State Department of Labor and Industries (L&I), n.d.). State-registered apprenticeships, for the most part, generate middle-class jobs and give people room to grow in their positions. CCW has worked with business, labor, nonprofits, education, and key state agencies to support creation of 33 new state-registered apprenticeship programs between 2020 and 2022, largely in emerging fields such as healthcare, information technology, and manufacturing.

Apprenticeships at CTCs have been growing. Enrollment in apprenticeships at CTCs rose from 7,500 to 12,100 apprentices between 2012 and 2022 (Enrollment Data Dashboard, 2022). This mirrors the overall growth of active apprentices statewide, which doubled from nearly 11,000 in 2013 to over 22,000 in 2022 (Washington State Apprenticeship and Training Council (WSATC), n.d.). Some of the growth in apprenticeship has come from new nontraditional programs in occupations like those above, outside of the construction and building trades. Data from the Washington State Education Research and Data Center (ERDC) show that 78 percent of individuals who completed a state-registered apprenticeship

since 2000 were concurrently enrolled in a Washington community or technical college. (EDNW, 2023)

Still, the number of apprentices who pursue secondary degrees, whether associate or bachelor's degrees, remains low, even with programs designed specifically with apprentices in mind, including multi-occupational trade degrees at CTCs and upside-down degrees at four-year colleges (see *Figure 1*. for more information).

The Washington Roundtable, a nonprofit organization comprised of several of the state's largest private sector employers, has set a goal to be reached by the high school class of 2030: 70 percent of Washington's students will obtain a post-secondary credential, such as a degree, apprenticeship, or certificate, by the age of 26 (Washington Roundtable, 2018). They estimate that this level of credentialing will be needed to meet future job demand as the state's economy grows. However, even as demand for workers with associate, baccalaureate, and higher degrees has increased, enrollments in the states' public two-year and four-year institutions of higher education have decreased (Washington Roundtable, 2023). A 2021 Washington Student Achievement Council report found that 70 percent of projected job openings in 2024-2029 will require at least some education beyond high school, with demand for workers with baccalaureate degrees and above remaining strong, followed by those with associate degrees, apprenticeship, and other credentials (Washington Student Achievement Council, 2021).

As the perspectives of interviewees that follow make clear, a lot of good work is happening on the ground in the state to support apprentices and provide career pathways for state residents. Over the past several years, important progress has been made to expand career pathways, increase the numbers of apprenticeship programs and apprentices, and create opportunities for apprentices to earn credits and degrees while they pursue their apprenticeship. Senate bills 5764 and 5600 also provide important momentum to address key challenges facing apprenticeship and increase access to higher education credits and degrees for apprentices. At the same time, as interviewees make clear, much work remains to be done.

Figure 1.

Multi-Occupational Trade (MOT) degree: Allows journeyed, state-registered apprentices that complete up to a certain number of hours of OJT, as well as hours of related supplemental instruction, to obtain an associate degree by completing a certain number of extra general education credits. (At least one private employer in Washington gives shares of its company stock to apprentices that complete an MOT degree while working for them.)

Types of MOT degrees include:

- Associate of Applied Science (AAS): A two-year degree for students who want to start a career immediately after graduation. Does not transfer to a university.
- Associate of Applied Science-Transfer (AAS-T): A two-year, job-training degree to prepare students for immediate employment.

These MOT degrees, as well as Associate of Technical Arts (ATA) and Associate of Applied Technology (AAT) technical degrees, transfer to applied baccalaureate degrees at CTCs, universities that have an agreement with the CTC issuing the MOT degree, or to those four-year institutions with upside down degree programs.

Upside-down degree: A four-year degree that grants two years of credit toward a bachelor's degree, which is awarded after the student's completion of two years of additional coursework. Applicants must have a technical associate degrees from a regionally accredited Washington community or technical college (an AAS, ATA, AAT, or AAS-T degree), complete English 101 with a GPA of 2.0 or higher, complete a minimum of 20 academic quarter hours of college-level credits with a GPA of 2.0 or higher in each course, and complete 32 credits or more of liberal arts coursework with a cumulative, college-level GPA of 2.5 or higher. This degree option is currently offered by Evergreen State College and Western Washington University. Eastern Washington University also has an upside-down degree for a Bachelor of Science in Applied Technology.

Source: Interviewees and Evergreen State College and Western Washington University websites.

IV. Initial Participant Perspectives

The following narrative summarizes input from the Center’s interview process described briefly at the beginning of this report and in more detail in [Appendix A](#). The report reflects the views of interviewees, except where indicated.

Participant Perspectives on Apprenticeship

Several interviewees said that compared to other states, Washington State is seen as a leader in its approach to apprenticeship. (This report uses the terms "interviewees," "respondents," and "participants" interchangeably to refer to people who participated in the assessment.) However, other countries, such as Germany, Switzerland, and the United Kingdom, have integrated their apprenticeship and higher education systems to a much higher degree and train many more apprentices across a much wider range of sectors and occupations, they noted.

Some apprentices that have completed their apprenticeship, or “journeyed out,” such as electricians and line persons, make more money on average than people with master's degrees, according to some respondents. Another interviewee said that the pay differential between apprentices and those with baccalaureate degrees changes after about ten years, because journey wages tend to stabilize, while baccalaureate degree holders’ salaries continue to increase over time.

Interviewees said that the building and construction trades comprise between 80 and 85 percent of apprenticeships in the state and union-sponsored apprenticeships account for most apprentice registrations. As a result, unions are deeply involved in apprenticeship in the state, helping fund apprenticeship training in the building and construction trades through union education funds.

The stigma associated with apprenticeship was cited by many interviewees, who say this stigma is often reflected in how choices are framed to young people. Many parents and K-12 educators still view apprenticeship as a “Plan B” for students who couldn’t make it in college, rather than as a desirable pathway to a living wage career and a college degree, at least one respondent said.

Participant Perspectives on Knowledge about Apprenticeship

Interviewees pointed out that outside of the apprenticeship community, most people do not really know what an apprenticeship is and how it works. And for those who might be interested, there may not be many opportunities to learn about them. At present, according to some interviewees, students in the K-12 system lack awareness of apprenticeships. According to these interviewees, K-12 teachers, counselors, administrators, and staff in middle and high school often do not have sufficient training, tools, or time to guide students on different industries and careers.

In schools where apprenticeship is being promoted, often through outside programs, the process for getting into an apprenticeship is not always clear, according to several interviewees; to get an apprenticeship, you have to know someone. Some described the rules and practices for getting into apprenticeships as archaic and opaque. One interviewee expressed skepticism about calls for diversity, because the perception is that the opaque rules and practices may function as gatekeeping to keep women and people of color out.

Other participants said that knowledge about apprenticeship has traditionally passed through family and friendship ties, but this is changing. This change is happening for a few reasons, they say, including that young people today are less interested in apprenticeship than their forebears, demand for apprentices is outstripping supply, and there is increasing interest in diversifying apprenticeship. These interviewees

say they recruit apprentices increasingly through high school outreach programs, career fairs, pre-apprenticeship programs, and veterans' programs.

Participant Perspectives on Trends in Apprenticeship

The completion rate for apprentices in Washington is 53 percent according to the Washington State Workforce Training and Education Coordinating Board (WTECB, n.d.), although one interviewee said that attrition tends to be lower for the higher skilled trades. Reasons for apprentices leaving their programs that interviewees cited include: the high cost (or lack) of childcare, lack of access to transportation, and inability to maintain finances. In addition, particularly in the building and construction trades, work is cyclical and seasonal. Also, according to some interviewees, first-year apprentices in many construction-related apprenticeships are often the last to be selected for jobs and there can be long breaks between jobs. The Washington Department of Labor and Industries (L&I) received funding under Senate Bill 5600 (2021-2022) to carry out a retention survey to obtain further data on apprenticeship completion and retention and plans to have public data available by mid-2024.

In the past several years, participants shared, apprenticeships have expanded into nontraditional occupations outside of the building and construction trades, including in sectors and occupations once accessed only through higher education. Some of the new apprenticeship programs mentioned are in healthcare, K-12 education, maritime, information technology (IT), aerospace manufacturing, government administration, and cosmetology. Several interviewees emphasized the importance of supporting nontraditional apprenticeships to fill labor shortages, particularly in the healthcare industry. Other interviewees expressed concern that policymakers may see apprenticeship as a solution for labor shortages or other policy goals, such as expanding career pathways for young people, but note that apprenticeships do not automatically lead to living wage jobs. At least one interviewee raised a concern that some new state-registered apprenticeship programs could lead to lower wage jobs that may dilute the overall value of apprenticeship.

Some interviewees said the building and construction trades are overrepresented in the membership of the Washington State Apprenticeship and Training Council (WSATC or the Council) in the Department of Labor and Industries (L&I), giving them an outsized voice in Council decision-making. Some believe that this can be a problem, for example, when new programs apply to be registered, partly because the Council members do not always understand the needs of other sectors and industries.

Some interviewees said more administrative barriers exist for nontraditional programs to get up and running; this includes most programs outside of the construction and building trades. For example, one interviewee cited a recent Council rulemaking process that recommends new standards for program quality and sustainability. They also feel the Council, as comprised, does not have the expertise to know who should be on the new industry panels being set up. The panels that have been created to represent nontraditional occupations, they say, can only make recommendations to the Council, which holds decision-making authority.

Participant Perspectives on Issues of Equity

Several interviewees said that women and people of color are underrepresented in apprenticeships, particularly in the construction and building trades. According to several interviewees, this contributes to their being underestimated and puts them at a higher risk of harassment.

At the aggregate level, the racial demographics of apprentices roughly mirror those of the state, though women continue to be underrepresented, and according to interviewees there can be big differences in demographics regionally and between programs.

According to the Council, there were 2,986 women (13 percent) and 7,522 “minority” apprentices (34 percent) out of 21,955 total (WSATC, April 2023). By race, approximately 66 percent of apprentices are White, 17 percent are Hispanic, 6 percent are Black, 5 percent are multi-racial, 3 percent are Asian, 2 percent are Native American, and 2 percent are Pacific Islander (Education Northwest, 2023). According to 2020 data from the state’s Office of Financial Management (OFM), the percentage of the population that is White, non-Hispanic is estimated to be approximately 63 percent (72 percent including Hispanic origins), 5 percent Black, 2 percent American Indian or Alaskan Native, 10 percent Asian, 1 percent Native Hawaiian or Other Pacific Islander, and 10 percent two or more races (OFM, 2020). Some interviewees noted that there are differences in racial representation among different apprenticeship programs.

As mentioned above, multiple participants said that people from underrepresented communities may lack knowledge about career pathways such as apprenticeships, or not know how to access an apprenticeship. Even if they do learn about apprenticeship, these interviewees said, it can be difficult to get into many apprenticeship programs without connections or insider knowledge. The same respondents observed that many women and people of color often choose college if they do well in school—not only because of the perception that apprenticeships carry lower status, but also because of a concern about racism and misogyny that several interviewees said may occur at building and construction trade worksites.

To address disparities, several interviewees spoke of the importance of efforts to recruit women and people of color into apprenticeship programs. Some interviewees noted strides in increasing the diversity of specific apprenticeship programs. Many respondents mentioned the importance of pre-apprenticeship programs in helping to diversify apprenticeship, particularly in the building and construction trades. Pre-apprenticeship programs, they say, can help to provide aspiring apprentices with basic life skills as well as practical on-the-job skills that help them succeed as apprentices. Pre-apprenticeship participants can also earn important credentials that will boost their chances of being hired.

Some pre-apprenticeship programs, like Apprenticeship and Nontraditional Employment for Women (ANEW), are trying to increase the number of women and people of color in the construction and building trades, according to some interviewees. In addition, they say, many newer programs outside of the building and construction trades such as cosmetology, aerospace, information technology, cybersecurity, and nursing, have an explicit focus on diversity, equity, and inclusion.

One interviewee spoke of the need to accommodate women in the workforce by, for example, providing women’s bathrooms, access to childcare, and a way to pump and store milk to feed their babies. Another interviewee said shorter programs are more conducive to women and people of color since they demand less of folks who have other pressing priorities and may face societal barriers. Higher education degrees may provide apprentices with more opportunities in the long-term but can be cost-prohibitive in the short-term. The interviewee said that taking time away from paid on-the-job training (OJT) can prevent many apprentices from pursuing a higher education degree, especially those with children. Shorter programs (less than two years) are therefore important for many women and people of color. Because of this, some CTCs are compressing more courses into a shorter time span for completion of an A.A. degree, according to the interviewee.

CTCs in Washington serve a higher percentage of women and people of color than in the past, one interviewee said, but funding constraints can impact the ability of CTCs to provide academic and career counseling and other support services for these groups.

Several of Washington's registered tribes are interested in apprenticeship. The Tulalip Tribes have created a pre-apprenticeship program to support tribal members in learning about and obtaining an apprenticeship placement in the construction and building trades designed to accommodate the specific needs of Native American students.

There are multiple incentives for tribal members to apprentice, according to one respondent. Better enabling higher education degree pathways in those programs would greatly benefit the tribal community. However, tribal members also face special barriers such as needing to know what the academic or administrative requirements are ahead of time (and prepare to fulfill those requirements). Such requirements include a driver's license (which many tribal members don't have), a high school diploma, a general education degree, and other documentation. Respondents pointed to a general need to raise awareness among tribal members and leaders about apprenticeship.

According to some interviewees, while financial assistance programs exist to support people with low to mid-range incomes to access apprenticeships, the programs may unintentionally create barriers for those who need it most. For example, they may require documentation of financial need or multiple quotes to pay for an apprentice's insurance or other expenses.

"In the United States, apprenticeship and higher education have evolved separately, each with their own traditions and cultures. They have also developed distinct policy approaches for regulating, financing, and designing the programs they deliver. These policies, in turn, reinforce the distinctions between the two systems, making it difficult for apprentices to earn college credit for what they learn and arduous for colleges to register apprenticeship programs and embed the financial models necessary to integrate them into degree tracks."

McCarthy, et al (2017)

Participant Perspectives on Higher Education and Apprenticeship

As interviewees pointed out, Washington State's higher education and apprenticeship systems are quite different. For example, Washington's public higher education institutions receive much of their funding from the state. In addition, both public and private higher education institutions in the state benefit from state and federal student aid programs, including federal student loan programs. By contrast, as one respondent noted, many apprenticeship programs, particularly in the construction and building trades, operate largely on private funding through employers and union employee benefit trust funds, though they also benefit from state funding for both programs and students.

The mission and goals of the higher education system and apprenticeship are not necessarily the same, some interviewees noted. Apprenticeship starts when an apprentice gets hired to do a job. The focus is on the job itself and the learning necessary to do it well. On the other hand, the broader goal of the higher education system, particularly the four-year system, but also the CTC system, according to some interviewees, is to create well-rounded citizens and future leaders, while also building the practical knowledge and skills that students will need to be employed.

Several interviewees expressed interest in the potential for apprenticeship and higher education to be viewed as different, but equal, as in other countries, such as Switzerland and Germany. These respondents also had interested in better integrating apprenticeship and higher education pathways as

Switzerland, Germany, and the United Kingdom have done. In those countries, apprenticeship and higher education are designed as parallel and intersecting pathways. Other interviewees said those countries' social, economic, and political systems are quite different from the situation that exists in Washington State and felt it would be hard to replicate their approach to apprenticeship and higher education here.

Participant Perspectives on the Economy and Higher Education and Apprenticeship

Several interviewees pointed out that demand for higher education and demand for apprenticeship are countercyclical. As they explained, enrollment at institutions of higher education typically goes up during economic downturns, when people are out of work and looking to gain credentials or degrees to increase their chances for employment. During such times, apprentice numbers drop. In good economic times, enrollments at institutions of higher education tend to decline, while more employers hire apprentices. As a result, according to some interviewees, CTC interest in apprentices typically rises when the economy is doing well and diminishes during economic downturns.

This countercyclical nature of higher education and apprenticeship can make it more difficult to come to agreements on credit articulation, RSI arrangements, and other issues, some interviewees noted, because the needs of each party differ depending on where the economic cycle is. At present, higher education enrollment is down, particularly in CTCs and among men, while interest in apprenticeship is high.

Participant Perspectives on the Diversity and Decentralization of the Higher Education and Apprenticeship Systems

Washington's higher education system consists of institutions that are independent and often different in approach and structure. For example, each higher education institution in the state uses a different number of days or weeks for each quarter. Some higher education institutions operate on the semester system, dividing the academic year into two parts. In addition, each of the state's 34 community and technical colleges has its own policy for articulating credits for prior learning; there is no "one size fits all" policy for the whole system that could work across the entire state.

Apprenticeship is likewise diverse and decentralized. As mentioned above, there are nearly 220 programs across many industries and sectors, all with different requirements for completion. In addition, apprenticeship has a different structure from academia. While academia is based on quarters (or semesters) and credits completed, the apprenticeship system is based on years and hours served (in the job and in the classroom for related supplemental instruction (RSI)). Apprenticeships vary widely in terms of the number of hours of OJT and RSI required. According to the L&I website, the completion standards for state-registered apprenticeship in Washington include minimum total work hours of 2,000-10,000 hours, depending on the occupation, and an annual minimum of 144 hours for RSI.

Participant Perspectives on RSI Contracts

The state's higher education and apprenticeship systems intersect primarily around the provision of RSI for apprentices at CTCs. CTCs negotiate contracts with apprenticeship sponsors to either provide RSI at the CTC or to articulate credit for RSI provided by an apprenticeship sponsor. Depending on the contract, CTCs may provide any combination of:

- Credit, usually nontransferable, although this can be negotiated with the apprenticeship provider, in which case a process for articulating the RSI credits would need to be created and worked through;
-

- Space, for instruction; and/or
- RSI.

Some CTCs also have agreements with specific apprenticeship programs to create degree pathways, such as Multi-Occupational Transfer (MOT) degrees (See *Figure 1* above). (The financial aspects of RSI are discussed in more detail below under *Funding for related supplemental instruction*.)

Respondents raised several issues with these contractual arrangements. One interviewee said that the relationship between CTCs and apprenticeship programs is sometimes viewed by the parties as a primarily contractual one. Some registered apprenticeship programs in the past engaged in shopping among CTCs for better contract terms. Respondents noted that the frequent movement of programs between CTCs prevented CTCs from planning for programs and enrollments, which decreased their motivation to partner with apprenticeship programs.

Several interviewees raised the issue that CTCs and four-year college instructors may not have the current industry technical knowledge that apprentices and their employers need, particularly in some industries, such as advanced manufacturing and information technology, where technology is changing rapidly. Some interviewees said that it could be difficult for CTCs to hire instructors with recent industry experience, because CTCs may pay less than industry. Interviewees also noted that changing the curriculum at CTCs and four-year colleges can take significant time and effort. On the other hand, others said that it takes time because of the high quality and rigor of the curricula at CTCs.

Some interviewees said that most nontraditional apprenticeship programs have fewer resources (such as dedicated training facilities) than traditional programs and are therefore located onsite at CTCs and more dependent on them. At least one interviewee saw this as a benefit, with proximity fostering more engagement and communication between colleges, programs, and apprentices.

Participant Perspectives on the Value of Higher Education

A few interviewees questioned the value of higher education degrees as compared to apprenticeship. To obtain a higher education degree, they noted, students have to step out of the workforce, pay tuition, and usually take out student loans to pay for tuition and other expenses, which leaves them in debt, whether they complete the degree or not. Apprenticeship, on the other hand, several interviewees said, starts and ends with a job, although as some noted, if an apprentice leaves before journeying out, they cannot transfer their invested time to another program and may end up leaving with nothing to show for their time.

Interviewees generally agreed that demand for degrees among apprentices is low. Respondents cited several factors for this, including concern about taking on debt, lack of interest in formal education, bias against higher education in some apprenticeship programs, and limited marketing by apprenticeship programs of opportunities for credits or degrees that apprentices can pursue. Apprentices may also not want to take the time to pursue the additional classes they need to earn a degree when they already earn good wages.

Other interviewees expressed concern that the emphasis on alternative career pathways, particularly at the K-12 level, sometimes has the effect of giving the message that baccalaureate and associate degrees are not important, even as research by the Washington Roundtable anticipates employer demand for employees with degrees to remain strong (Washington Roundtable, January 2022). While acknowledging the need for alternative career pathways, such as apprenticeship and certificates, they felt the promotion of these pathways should not come at the expense of baccalaureate and associate degrees.

Participant Perspectives on the K-12 System and Apprenticeship

Middle school and high school are excellent times for young people to learn about potential pathways, including apprenticeship and higher education and the possible combinations of the two, according to some interviewees. However, they said, multiple barriers can prevent young people from learning about these options in school. Some respondents said that apprenticeship is often not well understood or presented as an opportunity by educators and counselors, of whom there are few in the public school system relative to the numbers of students. In addition, as discussed above, the difficulty in getting information about or applying for an apprenticeship discourages counselors and educators from presenting them as opportunities. One interviewee said that counselors have told them they don't understand how the apprenticeship system works.

“...several respondents said K-12 educators think of, and present, apprenticeship and higher education as separate systems, although that is not always the case...apprenticeship can lead to both 2-year and 4-year degrees. At least one interviewee said that many high school guidance counselors do not know that apprenticeship and college can be part of the same path for students, rather than two distinct options.”

In addition, several respondents said K-12 educators think of, and present, apprenticeship and higher education as separate systems, although that is not always the case. Interviewees noted that those counselors and educators who do talk about apprenticeships may not know (and, if they do know, do not highlight) the fact that apprenticeship can lead to both 2-year and 4-year degrees. At least one interviewee said that many high school guidance counselors do not know that apprenticeship and college can be part of the same path for students, rather than two distinct options.

Finally, one respondent cited a 2022 survey by Washington STEM which found that 88 percent of high school students aspire to pursue post-secondary education (either a 2-year, 4-year, apprenticeship, or certificate program), while educators believed only 48 percent of students had such aspirations, a 40 percent gap. An even higher perception gap exists between the expectations students had that they would attend post-secondary education (83 percent) and what educators (40 percent) believed their students expected. Presumably, if educators knew how many students held such aspirations, they would present the complete range of options.

Participant Perspectives on Credit for Apprenticeship RSI

Interviewees had a lot to say about the process for articulating credit for apprenticeship RSI. Between those in academia and those in apprenticeship, very different perspectives emerged about how and even whether credit should be given for apprenticeship RSI. In addition, the sheer numbers of apprenticeship programs and institutions of higher education, with each program and institution doing things differently can make credit articulation complicated.

The system for articulating credit in institutions of higher education in Washington State has remained basically the same for decades, some interviewees said. They said the system is not flexible enough to account for how quickly technology and industry are changing.

Most RSI in Washington State is provided outside of the CTC system by instructors hired by the apprenticeship training provider, according to respondents. Because colleges do not provide the faculty

in these cases, several interviewees see it as hard to ensure sufficient standards for the things they must manage, such as academic rigor and course content. In addition, RSI curriculum can be proprietary, in which case the apprenticeship trainer may not be able to share it with CTC faculty for evaluation.

Participant Perspectives on Articulating Credit for Apprentices

As mentioned earlier, each institution of higher education determines its own process for how and whether to award college credit. Generally, according to respondents, decisions on whether to award credit occur at the faculty level, though a dean may have ultimate (or official) decision-making authority. In other words, decisions to award credit (whether for RSI, transfer credit, or experiential learning) are subject to several variables, including the institution's policies, agreements between institutions, precedent, and the decisions of faculty.

When RSI is delivered by a college, according to some interviewees, credentialing is easier, because the college designs the curriculum and vets the instructors. But if RSI or other prior learning is delivered by a program outside of a college, the credit given for that learning can be inconsistent.

More than one interviewee noted a gap between apprenticeship courses and higher education courses, generally. For example, a heating, ventilation, and air cooling (HVAC) apprentice needs to know very specific information about HVAC systems and how they work, while a liberal arts student focuses on more general knowledge and soft skills such as communication, writing, teamwork, collaboration, and qualitative analysis. This too makes articulating credit difficult.

Some interviewees said that institutional accreditation standards and federal requirements for student aid create barriers to making credits more transferable. These standards, said one interviewee, require any credits transferred from a CTC to a 4-year program to map onto an equivalent course offered at the 4-year school. If a federal audit showed a failure to meet these standards, a school could risk losing accreditation and access to federal financial aid monies for students, they said.

“[One] interviewee said that the overall goal of articulating apprenticeship learning into credit should be to enable more people to attain a bachelor's degree, which can increase earning power for people and create an off-ramp for apprentices later in life to equal or better employment...and historically underrepresented communities in higher education can gain skills, access, status, and earning power this way.”

Under the current system, respondents said that reviewing transcripts is time-consuming and it can be hard to determine whether credit can or should be awarded for RSI at any given institution. Faculty tend to look for whether the learning in an RSI course directly equates to learning in a comparable course at their institution in terms of the learning outcomes and knowledge or competencies gained. According to one interviewee, the documentation from outside training providers describing RSI provides just 1/16th of what is needed for establishing course requirements (outcomes, for example, are missing).

One respondent said that putting apprenticeship RSI into a course curriculum on the CTC books takes at least a quarter, often two or more, for the course to be accredited. After that it becomes much easier to create articulation agreements with other schools; however, updating the curriculum is a challenge.

Another interviewee said that the overall goal of articulating apprenticeship learning into credit should be to enable more people to attain a bachelor's degree, which can increase earning power for people

and create an off-ramp for apprentices later in life to equal or better employment. They said that a BA or BS provides access to other career pathways people might need later in their careers, and historically underrepresented communities in higher education can gain skills, access, status, and earning power this way.

Participant Frustration with the Credit Articulation Process

On the apprenticeship side, several interviewees see existing higher education institutional policies as a barrier to increasing the amount of transferable credit provided to apprentices. They said there should be a way to automatically accept a certain number of credits for both RSI and experiential learning for registered apprenticeships.

These interviewees said colleges often require courses that apprentices do not need to do their jobs. One interviewee said that the different credit articulation standards among colleges can mean that apprentices interested in pursuing a degree may have to retake courses they have already taken.

Other interviewees mentioned the importance of stackable credentials, or a sequence of certifications attainable over time that move an individual along a career pathway.

One interviewee said that CTCs across the state have created Direct Transfer Agreements (DTAs) for general AA degrees that allow the degrees to be transferred directly between schools. However, no such thing exists for apprenticeship programs, partly because of the lack of standards and the difficulty in creating them across so many diverse programs. However, according to another interviewee, a DTA associate degree includes up to 15 professional technical credits that may include apprenticeship.

Other interviewees in higher education spoke of the time it takes to develop articulation agreements at four-year colleges, which then often get used by only a handful of students. Some land grant institutions, one interviewee said, are stepping away from articulation agreements because of the level of detail needed to complete them. One tension, they said, is that CTCs and four-year colleges may disagree on what is worthy of credit.

Several interviewees said the lack of coordination between State agencies, such as L&I, SBCTC, the Washington Workforce Training and Education Coordination Board (Workforce Board), and institutions of higher education increases the complexity of navigating pathways for apprentices and programs alike.

Participant Perspectives on Crediting OJT

Several interviewees expressed interest in granting credit for apprentices for OJT, a type of experiential learning. Most interviewees at institutions of higher education felt that articulating hands-on OJT to academic credit would be difficult, if not impossible. As one interviewee said, the lack of transferability of on-the-job learning into general education credit slows down the process of transfer and the timeline towards receiving a degree.

Other respondents said that the higher variability of apprentices' life experiences, with some people returning to school with 15 years of work experience, presents another challenge for higher education in aligning financial aid, credentialing, and articulation for apprentices.

According to one interviewee, several post-graduate professional degree programs, such as medical school, veterinary medicine, and pharmacy incorporate experiential, competency-based education (a type of experiential learning that "focuses on student mastery of the subject matter rather than seat time" (Northwest Commission on Colleges and Universities, 2023) as a component of instruction, but this has not filtered down to the undergraduate level. Federal permission is required for competency-

based education approaches, the interviewee continued. In order to get approval, the college or university must specify what they consider to be a clear and unambiguous demonstration of competence. There is a challenge in defining competence in some professions, according to the interviewee; it needs to be both reasonable and defensible.

However, as described above (See *Figure 1* in Background and Context) several Washington institutions of higher education currently grant credit toward degrees to journeyed apprentices, both at the two and four-year level.

Participant Perspectives on Apprentices' Knowledge and Understanding of Credits and Pathways

Most apprenticeship training is provided through an apprenticeship training agent, by a journeyed instructor not affiliated with a CTC, and does not happen on a CTC campus, according to interviewees. One interviewee described a big difference in the relationship between CTCs and apprenticeship programs when the program is on campus, versus off. Off-campus programs may not see as much value in the partnership. Apprentices in off-campus programs may not know of existing options for higher education credit. Several interviewees reported that many apprentices do not even know that they are receiving college credit through their RSI.

Similarly, some said, many apprentices may not know that they are enrolled in a CTC and are eligible for the support services and benefits available to other CTC students. Even if they know they are students, they may never set foot on campus or know they can utilize these services and benefits, even though they (or their apprenticeship program) are paying student tuition there.

According to one interviewee, RSI credit often shows up on a CTC transcript simply as credit, without any specific attribution or course name. This credit is terminal, which means it cannot be used toward a degree.

According to one interviewee, apprenticeship programs—even those that automatically register their students at a college—do not do a good job of handing off their students to colleges to get the classes and credits they need for a higher education degree.

Participant Perspectives on Transferability of Credits and Degrees

The transferability of college credits and degrees has a direct bearing on their potential relevance for apprentices and students.

The issue of credit transferability is seen as complicated by several interviewees, as it relates to degree completion and financial aid. They said that, in higher education, whether and when credits transfer may impact student financial aid eligibility and degree completion. Students receiving federal and/or state financial aid have limits on the number of quarters or semesters they can receive financial aid funding for. If an apprentice's RSI courses do get credited, those credits might count as courses in their degree and limit their eligibility for financial aid.

In addition, some interviewees believe that institutions of higher education cherry-pick transfer credits. For example, one interviewee said that if an apprentice earns credit at a two-year college for their RSI, the receiving institution can decide to transfer only some of the credits. On the other hand, some interviewees said that stringent course equivalency requirements imposed by federal accreditation standards limit the credits that can be transferred.

Many credits and degrees for apprentices (including for RSI, as mentioned above) are terminal, meaning that they do not count toward a degree and the learner cannot transfer them to other institutions of

higher education. Interviewees said having transferable college credit attached to apprenticeship coursework gives apprentices more options and pathways; by contrast, several interviewees felt strongly that terminal degrees, particularly terminal associate degrees, which do not transfer to four-year colleges, do not hold a great deal of value for either apprentices or employers.

In the K-12 system, career technical education (CTE) dual credit programs are designed to allow high school students to earn college credit. However, one interviewee said that the credit articulation is not standardized, but instead is agreed on at the local level between instructors. This lack of a standardized system often means credits do not transfer if students go to a school different from the one with which the agreement was made.

Participant Perspectives on Degrees for Apprentices

The overwhelming majority of apprentices do not pursue higher education degrees, according to many interviewees. In addition to the barriers to pursuing a degree discussed above, such as lack of knowledge of different pathways to higher education, other barriers may arise. For example, interviewees noted that apprentices are nontraditional students, who cannot easily take courses during the day. Also, apprentices receive a 50 percent tuition waiver for RSI at CTCs (discussed in more detail below), that does not apply to the general education courses they need to fulfill degree requirements. Some interviewees question whether an AA degree will help apprentices earn higher wages or promotions into management.

Other participants said that most apprentices who go back to finish degrees do so because they gained previous exposure to the college system. One interviewee said that apprentices who take college-level courses and get credit for them are more likely to go back later and complete a degree.

One respondent cited an example of a private employer in Washington that gives shares of its company stock to apprentices that complete an MOT degree while working for them.

At least one interviewee felt that the MOT degree should be rebranded, because it does not resonate with apprentices. They suggested that each occupation (carpenter, electrician, laborer, plumber, coder, etc.) should have its own degree name. According to another interviewee, there have been attempts to require MOT degrees as part of apprenticeship programs, for example, with electricians in Seattle, between approximately 2007 and 2010, but the program was discontinued because the degree was not transferable and was not valued by participants.

Participant Perspectives on Funding for Apprenticeship RSI

Funding for apprenticeship training in the CTC system is a divisive issue. CTCs and apprenticeship programs seem to lack knowledge about and understanding of each other's finances, resulting in mistrust. One interviewee described a lack of transparency about cost on both sides.

According to one interviewee, until approximately 2012-2013, Washington had a state full-time equivalence (FTE) allocation set-aside for apprenticeship. So-called "high demand" apprenticeships received a significantly larger amount of FTE funding. Colleges negotiated reimbursement with Joint Apprenticeship and Training Committees (JATC). When the set-aside was removed, the CTCs folded apprenticeship FTEs into their overall budgets. Today set-aside funding for apprenticeships exists only for a few select programs, such as aerospace, which gets awarded through an open-bid contract. This history has created the perception among some respondents that CTCs appropriated dedicated funding for apprentices for other uses.

Another issue raised by many interviewees is the 50 percent tuition waiver. In 2004, the SBCTC reduced the waiver for apprentices in the CTC system (it was previously a two-thirds tuition waiver). The waiver reduces the cost of tuition for apprentices and apprenticeship programs but creates a disincentive for CTCs to partner with apprenticeship programs or create new apprenticeship programs, according to several interviewees.

From the CTC perspective, the primary funding available to provide apprenticeship RSI is tuition. As one interviewee put it, the state reimburses CTCs on FTE, not on head count. Tuition does not cover the contract amount the state says JATCs need to reimburse on. According to some interviewees, the 50 percent tuition waiver means that CTCs pay to take on each of these students, because the tuition does not cover the contract rate CTCs have to pay JATCs for the number of apprentices they serve. At least one interviewee said that these short-term contracts mean apprenticeship training providers may unexpectedly move to a different school after a year, which creates unpredictability for hosting CTCs around enrollment and funding forecasts.

CTCs say that providing apprenticeship RSI costs them money compared to other classes. Many in the apprenticeship world, on the other hand, are skeptical that providing RSI costs CTCs money, even with the 50 percent tuition waiver. At least one interviewee said that financial tracking systems at CTCs may not be sufficiently sophisticated to capture the costs and benefits of apprenticeships. On the other hand, another interviewee said that the overhead costs of operating an institution of higher education are high. On the apprenticeship side, some say that apprenticeship programs have to pay CTCs to do their own training to have courses credited and that many programs have stopped working with CTCs as a result.

CTCs that support apprenticeship training say they do so because apprenticeship is a core part of their mission, and they choose not to support other programs because of their commitment to apprenticeship. Apprenticeship sponsors say that they have to partner with CTCs by entering into full-time equivalent (FTE) agreements if they want RSI funding, a condition one interviewee characterized as a negative incentive.

The funding model does not work for all registered non-union apprenticeships either. As one respondent said, many of the unions have educational funds; non-union programs do not have the same level of resources. Another interviewee said no clear outline exists that one can follow to understand the FTE structure and its relationship between an apprenticeship program and a college, and that making the funding clearer and more transparent would allow small programs to partner with colleges.

Several interviewees said they want the legislature to reinstate the set-aside for apprenticeship FTE at CTCs. At least one interviewee said that self-sustaining funding for apprenticeship programs without any public funding should be the goal. On the other hand, some people emphasized the need for additional financial support of many emerging nontraditional programs in getting established.

Participant Perspectives on the WCG-A (Washington College Grant-Apprenticeship)

Apprentices' utilization of the WCG-A (created in 2019) has been much lower than anticipated, according to several interviewees. They said the amount of work to get approved to manage the WCG-A as a non-CTC apprenticeship program presents a barrier and because of limited administrative capacity is not worth the effort for many programs. As several interviewees put it, an apprentice program must essentially function as a financial aid office, though they may have perhaps a handful of apprentices at a time and limited staff capacity to support them. Some also mentioned the lack of administrative overhead allowance as a barrier. As a result, very few organizations have so far been approved to

manage WCG-A funds.

One participant noted that AJAC has approved more than \$450K in WCG-A funding and sees the WCG-A as an important tool in helping apprentices persist through their programs. Though the participant acknowledges the challenge of administering the WCG-A, they believe the results make it worth the effort. They said WSAC has done a good job of making the application process for apprentices simple and straightforward.

To address the difficulty apprenticeship programs have had accessing WCG-A funds, WSAC contracted this year with the nonprofit ANEW to serve make WCG-A funds available to apprentices enrolled in programs that are not approved to manage the funds.

On the apprentice side of the equation, filling out the form to qualify for the WCG-A can be a barrier, some interviewees said. Students may not have a high school degree. They have jobs and might struggle to find time to fill out the form. Because it is a grant, apprentices can use the funds to address key barriers to participation in their apprenticeship and RSI, including tuition, supplies, equipment, and other life expenses.

Several interviewees raised the issue that first-year apprentices may not qualify for the WCG-A because of their income, but that they may still need financial assistance to meet expenses. At least one interviewee said the problem is not a lack of financial aid, but a failure to get it to apprentices.

The maximum WCG-A award in 2023 is \$4,500. The lifetime maximum of WCG funds a student can receive is equivalent to the tuition and fees for fifteen full-time quarter credit hours. Use of WCG-A funds counts toward the lifetime limit of WCG.

V. Key Areas of Agreement, Disagreement, and Mixed Perspectives

A. Key Areas of Agreement

Nearly all interviewees agreed about some areas, including:

- Expanding career pathways for apprentices is important.
- The funding model for apprenticeship RSI is a source of distrust and conflict and needs fixing.
- As currently structured, apprenticeship and higher education are different tracks without a lot of intersection, except at the CTCs partner with apprenticeship programs.
- CTC enrollment and numbers of apprentices are countercyclical; when CTC enrollment goes down, numbers of apprentices increase and vice versa.
- There is stigma associated with apprenticeship in the eyes of many.
- Addressing issues of diversity, equity, and inclusion, particularly related to women and people of color, is a priority in both apprenticeship and higher education.

B. Key Areas of Disagreement

Disagreement emerged about some areas, including:

- CTCs and apprenticeship programs see the current model for funding RSI very differently and no interviewee seemed content with the current arrangement.
- Higher education, both CTCs and four-year institutions, and apprenticeship actors see the current model for awarding credit for RSI very differently and significant disagreement exists about how the process should work. Some interviewees see a need for a standardized process for articulation of apprenticeship RSI credit, while others feel the current decentralized system works best.
- Many interviewees expressed interest in a system that offers greater flexibility in granting transferable college credit for OJT, while others felt it is important to grant credit for experience that is equivalent to courses being taught at the credit-granting institution. Several interviewees felt that apprentices should receive associate degrees without needing to take additional coursework beyond their RSI, others disagreed that this would make sense without general education coursework.

C. Issues Characterized by Complexity and Mixed Perspectives

- Some respondents see high value in concurrent degrees for apprentices (degrees that apprentices automatically obtain as part of their apprenticeship through additional coursework at a CTC), while others do not.
 - The value of higher education degrees in the job market: some respondents believe higher education degrees carry high value, while others question whether they offer sufficient value for the money.
 - Institutions of higher education, both CTCs and four-year colleges, are concerned that messages to students about alternative career pathways deemphasize the importance of higher education degrees.
-

VI. Interviewee Ideas

What follows are ideas suggested by interviewees. These are not recommendations, but a reflection of interviewees' ideas related to issues likely to arise during a collaborative process. They offer potential for common ground or starting points for generating solutions that could meet the needs of all interested and affected parties.

A. General Ideas for Supporting Credits and Degree Pathways for Apprentices

Ensure that **credits and degrees are transferable**.

Clearly articulate the **value of credentials** to apprentices **and the pathways to employment they will open**. Integrate credentialing into the apprenticeship experience.

Agree on common competencies and improve **competency-based education**.

- Increase use of prior-learning assessments.
- Assign credit to students where they show competency. Create a model where students pay a small fee, take a test, and the institution gives credit. This could work like the College Level Examination Program (CLEP).

Do the paperwork so that institutions can review curricula to transcribe and articulate credit. Get it on paper and get it through accreditation committees. It is a long, hard process but as it stands no other way exists.

Assemble a **CTE dual credit advisory committee** between OSPI and SBCTC to determine a better system of credit articulation for dual credit programs. (Note: this committee is in place and according to one interviewee has made significant progress.)

Make **wraparound student support services** available to apprentices.

- Create a model similar to the K-12 Pathways Program that supports students at risk of dropping out. A similar model could help for general education classes for apprentices. This could also include student support services, including tutoring.

Increase collaboration between apprenticeship programs and two-year and four-year institutions of higher education:

- Create additional partnerships between CTCs and certain majors in four-year schools where it could benefit apprentices to get credit. (Instead of articulating credits on a case-by-case basis, give credit for RSI at a larger scale.)
- Better recognize the work that apprenticeship programs are already doing in a college curriculum frame and context.
- Encourage two and four-year colleges to work together to determine what apprenticeship coursework should get credit at each type of institution. (Four-years might need to talk about two-year competencies to map out a way to align them with credit at four-years. Also, there is a difference between accredited institutions and those not accredited via NWCCU.)

Create a group to develop criteria and parameters for **granting credit for prior learning, maybe for the entire state**.

Encourage colleges to rethink how they are **delivering instruction for high-skill, rapidly evolving roles** like software developer. What are the theories, technical skills, and general education materials students need?

Build awareness of credit opportunities and degree pathways for apprentices

- Encourage public and private schools to engage K-12 students about the possibilities of apprenticeship at younger ages.
- Create a unit of instruction for all apprenticeship programs on college credits and degrees to raise awareness of the multiple benefits of college.
- Provide navigators for young people in high schools, CTCs, and other institutions (nonprofits) to help youth to navigate career pathways and credit opportunities and understand the tradeoffs involved.
- Keep the number of pathways manageable. Having too many pathways can be confusing.
- Ensure that apprentices have information about all career pathways and the potential implications of each.

Degree pathways

- Create discrete classes within apprenticeship programs that carry credits that map on a pathway toward a degree. This would ensure that if someone left their apprenticeship they could apply the credits earned toward a degree.
- Create and market degree pathways to meet apprentices where they are.
- Design apprenticeship training programs from the outset to map toward clear competencies that can get credit, rather than working backward to translate RSI into college credits. To do that, colleges and apprenticeship programs will have to work together more closely than they do now.
- Fill the gaps and award credits during apprenticeship programs, so apprentices leave with at least an AA degree.
- Build more stackable credentials that can advance apprentices' careers and count toward additional credentials or degrees.
- Create a credential wallet system to track and verify what apprentices know. An employer could use it to see what the credentials an apprentice has earned.
- Make acceptance of credit for prior learning at CTCs and four-years more accessible and consistent.

B. Interviewee Policy Ideas

Guarantee apprentices can weather losing their jobs, perhaps through a policy that prevents apprentices without credentials from losing their positions during economic downturns. (Absent jobs, there is currently no clear pathway to program completion (journeying out) for apprentices.)

Encourage a **mindset shift in how RSI credits fit into higher education** and how institutions accept them.

- Reevaluate RSI credits to find ways to fit them within major higher education institution pathways and programs.
 - Change perceptions in higher education institutions about prior learning credits by explaining the benefits of prior learning.
 - Create a consistent standard across all CTCs for giving RSI courses credit.
-

- Update RSI for easier translation into a college curriculum. (When can CTC classes be substituted for RSI? What is being taught in RSI that is reflected in college courses?)

C. Interviewee Operational Ideas

Overall

- Work to **reduce the stigma of apprenticeship**.
- Find 1-2 colleges and a couple of apprenticeship programs and **build a new model that grants credit for prior learning, test it in a pilot**, then look to expand it (with tweaks as appropriate).
- Create an **apprenticeship college**, perhaps something as a separate arm of an existing college that is not brick and mortar; structured more like Western Governors University.

Higher education

- Encourage institutions of higher education to partner with businesses more directly and frequently to figure out what companies need and put in place the curricula to provide graduates with the desired skills.
- Improve access to higher education classes for apprentices by, for example, providing more classes in the evenings and online.
- Increase access to and awareness of wraparound services, particularly childcare and transportation, to help apprentices succeed.
- Create a dedicated funding authority for CTCs, as in some other states.
- Demystify finances for apprenticeship students by making it clear what financial services are available, for example, via navigators or ombuds.
- Reduce unnecessary bureaucratic hoops that discourage people from continuing their education. (An audit of student onboarding could help to identify reasons CTCs lose students.)

Apprenticeship

- Restructure the WSATC to include more of the newer, nontraditional occupation programs.
- Undertake a statewide effort to make apprenticeship programs equivalent and more streamlined and consistent.
- In communications to apprentices, incorporate information early and often about available financial aid and career and educational pathways apprentices. Pre-apprenticeship programs should emphasize these points so K-12 students can make more informed choices.

D. Interviewee Funding Ideas

Nobody is made whole in the current funding model. **Instead of fighting with each other, let's come together jointly to find solutions** and take those to the legislature.

Offset costs that lead to high apprenticeship attrition rates. Create something like the GI Bill that sets money aside for apprentices (as they pursue journey status) that pays not just for tuition, but the necessities of life. Make it so apprentices must opt out of getting credit for their learning, not in. Not just young, but older journeyed apprentices could get an AA degree and their knowledge and experience could stay in the industry.

Create a pilot program to explore new ways of collaborating around funding for apprentices.

Create a scholarship to help apprentices pay for their apprenticeship and ongoing education.

“Nobody is made whole in the current funding model. Instead of fighting with each other, let’s come together jointly to find solutions and take those to the legislature.”

RSI funding model

- Apprenticeship programs, businesses, and CTCs should work with the legislature to set aside dedicated funding for apprenticeship RSI at CTCs.
- Reimburse JATCs based on hours reported in the L&I Apprenticeship Registration and Tracking System (ARTS) database.
- Reduce competition by mirroring the way “incumbent worker training” is funded, where the employer and the CTC both bring money to the table, and clearly specify who gets what funding.
- Center the RSI funding conversation between CTCs and apprenticeship providers on how much it costs to train an individual apprentice and then work backwards to figure out fair funding and cost allocations. This could repair trust and transparency among different institutions.
- Create a fund, available on a first-come-first-served basis, underwritten and operated by the state, perhaps through the Department of Commerce, to support good programs and providers. Base funding amounts on the programs’/providers’ ability to get their apprentices into good paying jobs with career potential.
- Provide funding to the apprenticeship community (The interviewee suggested that the Workforce Board or WSAC could manage the funding.). Colleges would then see the benefit of working with the apprenticeship community.

Create a checklist with a formula for resource allocations: who is providing the training facility, who is providing the curriculum, who is providing the equipment, who is providing the instructors? This would make it clearer how funds should be divided.

VII. Past Efforts to Address Issues

Over time, various efforts have been undertaken to address the issues or problems that interviewees raised in this assessment. While there may be more, below are two efforts mentioned in interviews:

Apprenticeship Funding Task Force

Convened between 2015 and 2017, according to interviewees, the Apprenticeship Funding Task Force process did not resolve the apprenticeship funding issue. According to one interviewee, the process revealed deep misunderstanding of apprenticeship programs by higher education institutions, longstanding mistrust between the apprenticeship community and higher education, and a chasm between the Task Force participants' understanding of CTCs' finances and apprenticeship program finances. Respondents described the Workforce Board's solution to the funding issue as insufficient. Another interviewee said it came down to the same people in the room trying to divide up the same pizza rather than asking for more (or different) pizza or working together to find and propose creative solutions.

Common Course Numbering

According to one interview, CTCs attempted to implement common course numbering in 2006 to make it easier for students to transfer courses between CTCs in Washington. However, they said, the parties did not execute the work on transferability in a way that could have helped with apprenticeship programs. If successfully done, the interviewee felt, common course numbering statewide could allow a class like English 101 to be accepted across all institutions. However, not all institutions bought into it and each institution continues to allocate credits a bit differently.

VIII. Recommendations for a Collaborative Process

Based on the perspectives, issues, and ideas raised by interviewees, the Ruckelshaus Center has developed preliminary recommendations for a collaborative process for consideration by the legislature and other interested parties. The recommendations in this section arise from:

- An analysis of what the Assessment Team heard and learned from interviews,
- Exploration of and experience with similar governance processes in other contexts, and
- The Assessment Team’s expertise in collaborative and multi-party processes.

Questions, issues, and process recommendations raised by interviewees suggest potential ways forward for a collaborative process, including the following:

Interviewee Process Questions

Interviewees raised the following questions about a collaborative process:

- Do decision-makers need to be at the table?
- How can the process avoid parties focusing on “winning” and instead focus on sharing information, perspectives, and ideas in a respectful and transparent way that sets the foundation for generating shared solutions?
- How can the process ensure that no party is hurt, and that everyone emerges whole?

Process Issues Raised by Interviewees

There are myriad challenges that a collaborative process will face. These are a few of the major issues and views about the process that interviewees mentioned:

- All the parties are entrenched in their positions and a lot of mistrust exists. This makes the issues seem intractable. The funding model for RSI is a major sticking point.
- The 50 percent tuition waiver presents a major sticking point and it is unclear how it could be walked back: CTCs want to remove the 50 percent tuition waiver, but apprenticeship programs do not.
- Perceptions about the distinction between academic and on-the-job learning comprises another major sticking point. Some see what they perceive as the inflexibility of CTCs and four-year colleges as the biggest barrier to increasing credits for apprentices. They see little incentive for those in academia to change how it engages with registered apprenticeship. Colleges, they felt, do not want to lose the power to articulate credit and the SBCTC does not have a standard or framework for articulating credit. Interviewees from higher education, on the other hand, say that they are constrained by federal regulations and accreditation policies that require them to ensure equivalency between an apprentice’s on-the-job learning and courses offered by the credit-granting institution in order to maintain accreditation and the ability to award federal financial aid to students.
- Some interviewees thought getting solutions generated by the collaborative process through the legislative process would be difficult.

Interviewee Process Recommendations

Interviewees had several recommendations for how to create a productive process, including:

- Ask everyone to come with an open mind.

- Establish a clear, overarching purpose. For example, start with the goal of each party coming out of the process whole, and in a way that provides a more sustainable, secure platform for apprentices to grow and thrive and acquire credentials beyond their journey ticket.
- Focus on the needs of students and apprentices.
- Ensure that the process focuses on diversity, equity, and inclusion, starting with who is at the table.
- Ask all parties to commit to transparency and openness. Everyone is trying to do the right thing, but most, if not all, are operating on assumptions.
- Establish a shared set of facts:
 - Carry out a level-setting through sharing at the outset, including laying out all the pieces of the funding puzzle so everyone can see the full picture.
 - Create shared definitions, for example, about allocation of credit.
 - Have each party spell out their role in the system: what they do, for whom, and why.
- Set clear boundaries and ground rules early on.
- Under the first layer of leadership, many people share the same goal and have good relationships. There is already a willingness to collaborate. Involve middle managers and practitioners who are doing the work.
- Include people involved in the process with power over all the parties, such as the Governor's Office and legislators.

The Center's Preliminary Process Recommendations

Based on this input and its previous experience with similar process, the Assessment Team suggests the following as a possible way to organize a collaborative process to explore recommendations to increase access to higher education credits and degrees as well as funding for state-registered apprentices.

The process ideally should be initiated by those in a leadership level at state agencies, businesses, labor, higher education, and nonprofits. This group could include relevant representation from the legislature and the Governor's Office. This could take the form of a Leadership Committee or Decisionmakers Group, that could develop and agree on a vision for success that satisfies all parties, ascertain key issues and decision points, and commit to endorsing the findings of topic-specific workgroups (after buying into their composition and tasks).

Based on recommendations from interviewees, the Center also suggests that such topic-specific workgroups consist of mid-level managers, deans, faculty, program managers, and other practitioners who work on these issues daily and know them thoroughly. Workgroups could include "RSI funding model" and "apprenticeship credits and degrees." A separate, parallel workgroup of state agencies to work on cooperation, alignment, and streamlining toward student/apprentice success could come together and, ideally, continue beyond the duration of this specific effort.

Representation for the leadership group and workgroups would come from the participants suggested by participants below, in addition to any organizations that participants feel it crucial to include.

The Center heard clearly from interviewees of the strong need to build trust in this process. While trust takes time to build, tools to assist this could include eating meals together, going on field trips to see innovative collaborations in practice or talking with apprentices, meeting in-person whenever possible, and professional impartial facilitation agreed to by all parties.

The phases of the process could include:

- Develop and agree on a purpose for the process and a charter that lays out the responsibilities of each party and the ground rules for discussion.
- Map the existing situation to develop a shared set of facts on which everyone can agree, for example, around the RSI funding model and the realities that all parties face, or asking different parties how they see the allocation of credit for RSI —and asking each party to articulate how the “other” parties see that allocation;
- Identify additional information needs to inform the generation of shared solutions
- Share perspectives, including what the characteristics of an optimal outcome and shared vision for the future for all parties looks like;
- Out of that visioning exercise, create a shared set of principles or values.

Suggested Structure and Participants

Based on the Center’s experience, successful processes require that each participating entity commit to providing representative(s) that:

- Have the authority to accurately and transparently state what the entity can or cannot commit to at the policy and decisional level;
- Understand and can speak to the day-to-day technical, operational, administrative, fiscal, and other tasks;
- Are willing to commit to listening to and being open to other perspectives, and to viewing the issues and landscape through the eyes of other parties; and
- Reflect the diversity of the state.

The following participants were suggested by interviewees.

State agencies and policymakers, for example:

- Governor’s Office
- Key legislators
- SBCTC Workforce Director and Deputy
- Joint Transfer Council of Washington
- Washington Student Achievement Council
- Department of Labor and Industries Apprenticeship and Training Council
- Council of Presidents
- Office of the Superintendent of Public Instruction
- Department of Commerce, Office of Economic Competitiveness and Development
- Workforce Training and Education Coordinating Board

Business and industry, for example:

- Associated Building Contractors of Washington
- Associated General Contractors of Washington
- Association of Washington Businesses
- Washington Roundtable Partnership for Learning
- Construction Industry Training Council
- Washington Technology Industry Association
- Companies that employ apprentices

Organized labor, for example:

- Washington State Labor Council, AFL-CIO
- Washington Building Trades Council

- Machinists Institute
- International Association of Machinists District 751
- SEIU Healthcare 1199NW Multi Employer Training and Education Fund

Community and Technical College (CTCs) administrators and faculty, for example:

- South Seattle College
- Community Colleges of Spokane
- Renton Technical College
- Bates Technical College

Four-year public college administrators and faculty, for example:

- Eastern Washington University
- Evergreen State College
- University of Washington
- Washington State University

Four-year private career college administrators and faculty, for example:

- The Independent Colleges of Washington
- Pacific Lutheran University

Washington State Centers of Excellence

Relevant nonprofits, for example:

- Northwest Commission on Colleges and Universities
- Career Connect Washington
- Apprenti
- AJAC
- Seattle Jobs Initiative
- American Council on Education (ACE) [Note: This is a national nonprofit]
- Council on Adult and Experiential Learning (CAEL) [Note: This is a national nonprofit]

Apprenticeship programs, both union and nonunion, as well as new programs, for example:

- RSI instructors
- Joint Apprenticeship and Training Committees (JATCs)
- Non-construction and nontraditional apprenticeship coordinators

Pre-apprenticeship providers, for example:

- Apprenticeship in Nontraditional Employment for Women (ANEW)
 - TERO Vocational Training Center (Tribal Employment Rights Office)
-

IX. Conclusion and Next Steps

While the assessment team heard a great deal about the disagreements and mistrust between the worlds of apprenticeship and higher education, we also heard several promising things, including:

- Agreement on several key areas ([see section III, A above](#)) and a clear sense of where the disagreements ([in section III, B above](#)) exist.
- An interest in working with other interested parties to address key areas of disagreement.
- People in higher education collaborating across institutions and with apprenticeship providers to solve long-standing issues, such as the articulation of credit for apprentices and transferability of credits across institutions.
- Nonprofits creating new apprenticeship programs and finding innovative ways to work with employers, state agencies, and unions to give people a chance to apprentice in areas such as healthcare, information technology, and the maritime industry.
- State agency employees working to change policy and practice to support apprentices and students across the state and bring interested parties together to find common ground.
- A common focus on the needs of apprentices and students.

Immediate next steps might include communications between the Ruckelshaus Center’s project team and representatives of those parties listed above (under “Suggested structure and participants”) to confirm their interest and availability for an upcoming collaborative process and identify appropriate representation for each entity. Those conversations can help shape the core components of the collaborative effort such as visions of what success looks like, overall timeline, key participant/s from each entity, sequencing of topics of discussion, and initial identification of subcommittees or workgroups.

Areas of disagreement remain on core issues, but based on past experience the assessment team believes that the right people in the room—with buy-in from decisionmakers and guided by a well-designed process and trusted impartial facilitation that ensures that all voices are heard—can generate opportunities to better serve state-registered apprentices in Washington.

X. Appendices

Appendix A: Assessment Process

i. Background and Overview

The William D. Ruckelshaus Center (the Center) serves as an impartial resource for collaborative problem solving in the state of Washington and the Pacific Northwest, providing expertise to improve the quality and availability of voluntary collaborative approaches for policy development and multi-party dispute resolution. The Center operates as a joint effort of Washington's two research universities, the University of Washington (UW) and Washington State University (WSU). For more information, see attached overview (see [Appendix F](#)) or visit www.ruckelshauscenter.wsu.edu.

The 2022–23 Washington State Operating Budget (SB 5764) directs the Washington Student Achievement Council (WSAC) to contract with the Center to:

1. “Evaluate paths to credentials for apprentices, including recommendations on the requirements and benefits of expanding the multi-occupational trades degree, and exploration of other credentials that will support transfer to baccalaureate degrees or other advanced credentials for apprentices...;
2. Examine national best practices in delivery and award of educational credentials to apprentices...;
3. Research apprentices' demand for degrees, including at which stage in their career a person may seek credentials from their apprenticeship towards a degree;
4. Review the current funding model for apprentices within the community and technical college system...;
5. Consult with an organization representing the presidents of the public four-year institutions of higher education, the office of the superintendent of public instruction, the joint transfer council of Washington, the department of labor and industries, the Washington state labor council, the Washington building trades council, the student achievement council, the independent colleges of Washington, private career colleges, an accrediting body, career connect, and other stakeholders with interests and expertise in apprenticeship training and higher education mobility;
6. Identify and remove barriers for apprentices to access the Washington college grant program.”

The Ruckelshaus Center specializes in collaborative governance, designing and facilitating solution-focused processes of fact-finding, identification of common interests, dialog and deliberation, and consensus decision-making. Based on that specialty and the above verbiage, the Center interprets the verbiage “Consult with...” (followed by a list of several entities) as a directive to convene a facilitated collaboration among interested and affected parties, beginning with those identified in the legislation and adding other participants identified by those knowledgeable about the issues and players.

The first step in the Center's methodology is a tool called a situation assessment, an interview-based effort to better understand and explore relevant issues and interests of involved parties, along with the situation dynamics. A situation assessment is a typical first step in exploring a potential collaborative process that reveals useful information about the issues and the parties that informs next steps forward, whether that involves a collaborative process or not. For the purposes of this report, a collaborative process is defined as a solution-focused dialogue among all key interests, participating willingly, that is convened and facilitated by an impartial facilitator. If the parties to a collaborative process reach

agreement, the results typically get channeled through traditional legislative, executive, and/or agency policy forums for consideration and possible action.

The Center reached out to a broad and balanced range of parties between January and July 2023 to capture a wide range of perspectives. Interview candidates were identified via the Center's background research, conversations with WSAC staff, and chain referral sampling (in which all interviewees are asked to identify additional potential interviewees). The assessment was intended to identify the major issues and key parties involved and document their interests and perspectives. It also explored the prospects for a collaborative process to address those issues.

ii. Assessment Process:

Assessment Team

Tye Ferrell (Lead Facilitator) managed the situation assessment, with strategic oversight from Phyllis Shulman (Interim Director of the Ruckelshaus Center). Tye, Phyllis, and Chris Page (Senior Facilitator) designed the assessment process, developed the protocols and guide for the interviews, and conducted the interviews. Project Coordinator Matt Joyce scheduled interviews, took notes, and managed communications for the Center. Tye synthesized and summarized findings and drafted this report with significant input and contributions from Chris and Matt.

The Center contracted with Education Northwest, a research firm in Portland, Oregon for additional capacity and targeted identification of best practices in apprenticeships and credentialing from other states and nations. Where relevant, this report mentions findings from Education Northwest.

Identification of Parties

The Center consulted the Bill Report for SB 5764, which listed entities with whom the Center must consult. Additional background research and initial conversations with WSAC produced a preliminary draft list of interested parties. A handful of interested individuals and organizations contacted the Center, providing more potential interview subjects.

The assessment team selected an initial round of interviews representing a broad and balanced range of interests. Based on suggestions from these interviewees, the Center conducted additional interviews. A total of 46 interviews were conducted with 54 individuals, included in *Appendix B*. The list is not meant to be exhaustive but rather to include a balance from each significant category of interested constituency. The goal is for all interested parties to feel that their perspective was included in the assessment, whether they themselves were interviewed or not.

iii. Interview Protocols

The assessment team developed a set of protocols to govern the interview process, based on university human subject research principles and best practices in the field of collaborative decision-making. The Center invited interviewees by email and/or phone to participate in an interview and provided background information explaining the process, the purpose, and how the interview would be used.

The preliminary information emphasized that the interview would be confidential (to be consistent with university research protocols and encourage interviewees to be as frank as possible), in that the results would be aggregated in a summary report and specific statements would not be attributed to individual interviewees. Interviewer notes of the conversation were not retained beyond the drafting of the report, per research protocol. The Center conducted interviews by zoom video meeting technology or in-person.

Appendix B: List of Participants

Name	Title	Association
Kristina Ackley	Dean of Experiential Learning	Evergreen State College
Andrea Anderson	Senior Director, Education	Apprenti
John Aultman	Senior Policy Advisor, Higher Education & Workforce Development	Governor's Office
Cherie Berthon	Operating Budget Director	WA State Board for Community and Technical Colleges
Maryann Brathwaite	Director	Northwest Career Colleges Federation
Marie Bruin	Director of Workforce	WA State Board for Community and Technical Colleges
Carolyn Busch	Workforce Innovation Director & Industry Sector Program Coordinator	WA Office of Commerce
Jennifer Carlson	Co-Founder, Executive Director	Apprenti
Jackie Coomes	Interim Vice Provost	Eastern Washington University
Maud Daudon	Project Leader	Career Connect Washington
Bill Davis	Co-Chair	Joint Transfer Council of Washington (and Washington State University)
Karen Dove	Executive Director	ANEW Apprenticeship and Non-traditional Employment for Women
Andy Ferrera	Principal	Kinetic West
Ruben Flores	Interim Executive Director	Council of Presidents
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Nancy Gale	Principal	TLG Learning
Alejandro Garcia	Cement Mason Apprentice	Cement Masons & Plasterers Local 528
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Laura Hopkins	Executive Director	SEIU Healthcare 1199NW Multi Employer Training and Education Fund
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Jacob Jackson	Vice President of Administration and Finance	Renton Technical College
Jaclyn Jacot	Dean of Extended Learning and Workforce Initiatives	Spokane College
Brian Jeffries	Policy Director	Washington Roundtable Partnership for Learning
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Terese King	Interim Executive Provost	Washington State University
Laura Kingston	Interim Executive Dean	South Seattle College
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Jens Larson	Asst. VP - Enrollment Management	Eastern Washington University
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Jonathan Luster	Program Director	Washington Opportunity Scholarship
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Anna Minor	Budget Assistant	WA Office of Financial Management
Marina Parr	Director of Workforce Systems Advancement	Workforce and Training Board
Sarah Patterson	Workforce Development Director	Associated General Contractors of Washington
Shana Peschek	Executive Director	Machinists Institute
Kairie Pierce	Lead Workforce Development Director	Washington State Labor Council, AFL-CIO
Chris Pierson	Director of Operations and Funding	Aerospace Joint Apprenticeship Council
Sonny Ramaswamy	CEO	NW Commission on Colleges and Universities
Jody Reis	Senior Manager, Education	Apprenti
Mark Riker	Executive Secretary	WA State Building and Trades Council
Christina Riley	Owner	Christina Riley Consulting
Jody Robbins	Prevailing Wage Program manager	Department of Labor and Industries, Prevailing Wage Program
Carli Schiffner	Deputy Executive Director of Education	WA State Board for Community and Technical Colleges
Jessee Skittrall	President and CEO	Atarashi Apprentice Program
Steve Smith	Executive Director	Black Education Strategy Roundtable
Elise Solima	General Machinist & Apprentice Graduate	Boeing
Demetria "Lynn" Strickland	Executive Director	Aerospace Joint Apprenticeship Council
Lisa Telford	Family Career Navigator	TERO Vocational Center
Rebecca "Becky" Wallace	Assistant Superintendent, Secondary Education and Pathway Preparation	OSPI
Laura Welch	Assistant Director, Transfer Center	Washington State University
Cheri Willis	Senior Manager, Education	Apprenti
Bridget Yaden	Associate Provost, Undergraduate Programs	Pacific Lutheran University
Lief Zimmerman	Senior Program Manager	F5 Inc.

Appendix C: Glossary

Apprenticeship (Registered): A formalized, structured training program that combines on-the-job training (OJT) and related technical instruction (RTI) in which you receive practical and technical training.

Apprenticeship sponsor: Any person, firm, association, committee, or organization operating as an apprenticeship and training program and in whose name the program is registered. (Washington State Legislature, n.d.)

Apprenticeship training agent: An employer of registered apprentices approved by the program sponsor to furnish on-the-job training in accordance with approved program standards. (Washington State Legislature, n.d.)

Articulation Agreement: A partnership between a community and technical college (CTC) and a university to help students transfer credits towards specific programs or degrees that may not be transferable otherwise. (Eastern Washington University, n.d.)

Competency-based learning: A method of academic instruction and evaluation based upon students demonstrating their mastery of a subject. (Western Governor's University, n.d.)

Career technical education: A broad term for education that combines academic and technical skills with the knowledge and training needed to succeed in today's labor market. (Education Northwest, 2021)

Credit articulation: A method of granting university-level course credit for learning and skills accomplished as part of secondary school instruction.

Direct assessment: An evaluation of a student's demonstrated ability to perform specific tasks or relate material in an acceptable manner compared to learning outcomes. (IGI Global, n.d.)

Full-time equivalent (FTE): A unit of measurement used to determine the number of full-time hours worked by all employees in a CTC or university. For example, an employee that works 40 hours per week would have an FTE of 1.0. (Forbes, 2022)

Journey level: An individual having sufficient skills and knowledge of an occupation to be recognized by a state or federal registration agency and/or an industry as being fully qualified to perform the occupation. An individual can be fully qualified either through formal apprenticeship training or practical on-the-job work experience equal to or greater than the term of apprenticeship. (Washington State Legislature, n.d.)

Journeyman/Journey person: A skilled worker who has successfully completed an official apprenticeship qualification in a building trade or craft. (Law Insider, n.d.)

Journey out: The subsequent period of work experience required at the journeyman level, after the completion of an apprenticeship, to qualify to sit for your master's level examination.

Journey card: A license certifying the completion of an apprenticeship, or sufficient on-the-job experience, as well as passing a written examination or providing evidence of having completed all necessary requirements.

Related and supplemental instruction: An organized and systematic form of instruction designed to provide the apprentice with knowledge of the theoretical and technical subjects related to the

apprentice's occupation. (Washington State Legislature, n.d.)

Stackable credentials: A sequence of certifications that can be attained over time and move an individual along a career pathway. (Jobs For the Future, n.d.)

Terminal credit or degree: The furthest level that a student can reach within a specified educational pathway, either due to a lack of a subsequent program level, or because the credit/degree is non-transferable to other programs.

Appendix D: Acronyms

Organizations

- **CCW** – Career Connect Washington
- **JATC** – Joint Apprenticeship and Training Committee
- **L&I** – Washington State Department of Labor and Industries
- **OSPI** – Washington State Office of Superintendent of Public Instruction
- **SBCTC** – Washington State Board for Community and Technical Colleges
- **WSAC** – Washington Student Achievement Council

Types of degrees

- **AA** – Associate of Arts
- **AAS** – Associate of Applied Science
- **AAS-T** – Associate of Applied Science - Transfer
- **AS-T** – Associate in Science - Transfer
- **BAS** – Bachelor of Applied Science aka “Applied Baccalaureate”
- **MOT** – Multi-Occupational Trades

Key terms

- **CTCs** – Community and Technical Colleges
 - **K-12** – Kindergarten through twelfth grade
 - **OJT** – On-the-job training
 - **RSI** – Related supplemental instruction
 - **RTI** – Related technical instruction
 - **WCG-A** – Washington College Grant for Apprenticeship
-

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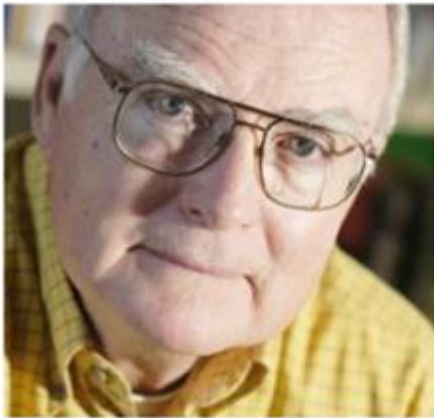
Western Governor's University. <https://www.wgu.edu/student-experience/learning>

Appendix F: Information about the Ruckelshaus Center

WASHINGTON STATE UNIVERSITY

THE WILLIAM D. RUCKELSHAUS CENTER

UNIVERSITY OF WASHINGTON



“Collaborative problem solving is an enormously powerful approach to resolving conflicts; it holds great promise for better, faster and more sustainable policy decisions. With the combined resources of our premier research institutions, this center establishes an invaluable neutral forum for addressing some of our most complex and pressing challenges.”

- WILLIAM D. RUCKELSHAUS

For more information on the William D. Ruckelshaus Center, please visit our website at:
RuckelshausCenter.wsu.edu

ABOUT THE RUCKELSHAUS CENTER

MISSION

The mission of the William D. Ruckelshaus Center is to help parties involved in complex public policy challenges in the State of Washington and the Pacific Northwest tap university expertise to develop collaborative, durable, and effective solutions.

VISION

The Center envisions a future in which government leaders, policy makers, and community members routinely employ tools of collaborative decision-making to design, conduct, and implement successful public policy processes.

IDENTITY

We are a joint effort of Washington State University, hosted and administered by WSU Extension, and the University of Washington, hosted through the Daniel J. Evans School of Public Policy and Governance. Building on the unique strengths of these two institutions, the Center applies university resources and knowledge towards solving challenging public policy issues.

VALUES

Collaboration, consensus, equity, knowledge, education, inquiry, and independence.

WHAT WE DO

The Ruckelshaus Center helps people work together to develop shared solutions to challenging public policy issues. Areas where we work include:

- Community and Economic Development
- Land Use
- Natural Resources
- Transportation
- Agriculture
- Healthcare
- Tribal, Federal, State, and Local Governance

We build problem-solving capacity in the region by helping individuals and organizations better understand, initiate, participate in, and lead collaborative public policy efforts.

WHO WE SERVE

The Center assists public, private, tribal, nonprofit, and other leaders to build consensus, resolve conflicts, and develop innovative, shared solutions for Washington and the Pacific Northwest.

Appendix G: Working with the Ruckelshaus Center

"You brought collaborative problem solving, you brought trust, and you shifted the discussion."

*-MAIA BELLON
Former Director, Washington State
Department of Ecology*



HOW WE DO IT

- Provide a neutral and safe forum for parties to constructively define shared goals and resolve differences
- Conduct a situation assessment to determine how parties should proceed with a collaborative approach
- Provide facilitation, mediation, dispute resolution, project management, strategic planning, and other services that help parties reach consensus and resolve issues
- Provide diverse groups with a common information base via university research and fact finding
- Provide knowledge, training, and tools to improve the collaborative problem-solving abilities of individuals and organizations
- Host policy discussions in the form of guest lectures, conferences, and our Ruckelshaus Circle Luncheon

GOVERNANCE AND FUNDING

We are guided by an Advisory Board which includes prominent leaders representing a broad range of constituencies from across Washington and both chambers/parties in the Legislature. Funding for the Center is sought from a mix of sources, including foundations, corporations, individuals, agencies, other state and federal sources, and fee-for-service contracts, when appropriate.

WSU Extension and UW Evans School of Public Policy and Governance programs and employment are available to all without discrimination.

Contact Us!

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WASHINGTON STATE UNIVERSITY
EXTENSION

W
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Updated February 2022

Apprenticeship and Higher Education

Introduction

Apprenticeship provides on-the-job training, guided by a master practitioner, and classroom instruction for individuals to learn a trade, craft, or profession. Though best known in construction and trades occupations, apprenticeships provide a pathway to many different jobs, such as health care, education, information technology, and engineering. Apprenticeships are unique in combining theoretical knowledge learned in the classroom with practical skills learned on the work site (Jones, 2011). Additionally, apprentices receive wages throughout the program, making an apprenticeship an “earn while you learn” opportunity. Apprentices earn a nationally recognized certificate upon completion of the program and enjoy a high employability rate and salary (Washington State Board for Community and Technical Colleges, 2022), making apprenticeship an attractive career pathway for diverse youth and adult workers.

In 2021, there were nearly

600,000 apprentices in the U.S.

(U.S. Department of Labor, 2021a)

This represents a

50 percent increase over 10 years from over **350,000** apprentices in 2011

However, compared to college enrollment statistics, which show over

15 million students enrolled in 2021,

apprenticeships are a much less common postsecondary pathway in the U.S.

(U.S. Department of Education, 2023)

Additionally, the U.S. trails behind other countries such as Switzerland, where more than **two-thirds** of students choose apprenticeship and in Germany, where more than half do

(Neuber-Pohl, 2021; Swiss Confederation, 2023)

Despite offering many benefits to both apprentices and employers, apprenticeship is not a common career pathway in the U.S. Though on the rise, apprenticeship numbers trail college enrollment in the U.S. and apprenticeship participation in other countries, such as Switzerland and Germany. These countries are internationally known for their highly developed dual education and vocational (VET) systems, which promote apprenticeship and postsecondary education as connected, viable pathways to a variety of careers. In the U.S., apprenticeship and higher education systems largely operate independently, with varying identities, cultures, systems, regulations, and financing (McCarthy et al., 2017). McCarthy et al. (2017) argues that the biggest barrier to apprenticeship in the U.S. is that it doesn't deliver the credentials (i.e., college degrees) that are required for career advancement. Therefore, many are considering how to enable people to participate in apprenticeship and higher education at the same time.

Better integration of higher education and apprenticeship could make apprenticeship opportunities more widely available and increase equitable access to higher education (McCarthy et al. 2017). Creating a dual system of higher education and apprenticeship would provide apprentices with a verified credential such as an industry certificate, college certificate, or degree after their apprenticeship. However, integration presents significant challenges, including the amount of learning and training that goes on in the workplace, inflexible credit requirements for degree programs, the amount of institutional resources and effort needed to start a program, and the willingness of apprentices to go through a years-long classroom and hands-on training program (Klor de Alva & Schneider, 2018). Addressing these challenges through collaboration between the two systems is a growing trend among funders, policymakers, and institutions.

Methods

Washington State is interested in connections between higher education and apprenticeship pathways. Passed in 2022, Washington state Senate bills 5764 and 5600 aim to develop and improve opportunities for apprentices to receive credit towards degrees. Specifically, Senate bill 5764 instructs the Washington Student Achievement Council to work with the William D. Ruckelshaus Center to study, consult stakeholders about, and report on opportunities for apprentices to earn degrees. The Ruckelshaus Center partnered with Education Northwest to review the literature on creating pathways to credentials for apprentices.

Our research focused on four main topics of interest, as outlined in Senate bill 5764.

1. Paths to credentials for apprentices
2. Apprentices' demand for degrees
3. Funding models
4. National best practices

We performed a broad-ranging literature and policy scan to collect information and sources on these topics. Sources included data and publications produced by regional, national, and international organizations with relevant authority and/or expertise in apprenticeship-related policy and practice. We requested and analyzed data from the Education Research and Data Center (ERDC) and Washington Labor & Industries (L&I) to provide context for apprenticeships and higher education. Additionally, we created a survey to assess apprentices' experiences and interest in credentials.

This research is intended to complement the situation assessment conducted by the William D. Ruckelshaus Center through interviews with Washington-based informants, stakeholders, and apprenticeship experts. Together, the combined research highlights both national and local trends, themes, and topics of interest in apprenticeship that can facilitate continued conversation and innovation to expand opportunities for apprentices in Washington.

Washington context

Apprenticeships in Washington typically last **two to five years**

Require a minimum of **2,000 hours** of on-the-job training

144 hours of related supplemental instruction

(Washington State Apprenticeship and Training Council, 2023a)

As of fall **2022**, there were about **200** registered apprenticeship programs in the state

covering **220** different occupations
(Washington State Department of Labor and Industries, n.d.a)

Washington has seen apprenticeships grow **100 percent** from nearly **11,000** in 2013 to **22,000** in 2022

(Washington State Apprenticeship and Training Council, 2023b)

Construction trade occupations make up around **84 percent**

of Washington apprenticeships, with the most popular occupation by far being construction electrician

(Washington State Apprenticeship and Training Council, 2023)

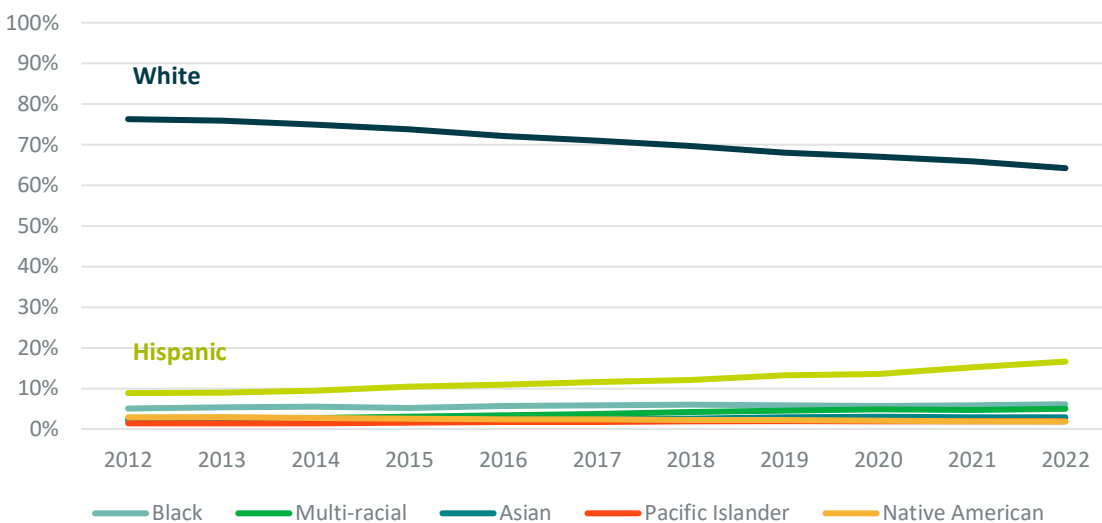
Enrollment

Data from the Washington State Department of Labor & Industries (L&I) show that as of 2022, there are about 22,000 apprentices in the state. Of these apprentices, 87 percent of apprentice are male, while 13 percent are female. By race, 64 percent of apprentices are White, 17 percent are Hispanic,

6 percent are Black, 5 percent are multi-racial, 3 percent are Asian, 2 percent are Native American, and 2 percent are Pacific Islander.

From 2012 to 2022, there has been a 12 percent decline in the number of White apprentices and an 8 percent increase in Hispanic apprentices (figure 1). For other racial and ethnic groups, there were small changes over time: a 3 percent increase for multiracial apprentices, a 1 percent increase for Black apprentices, a half percent increase for both Asian and Pacific Islander apprentices, and a 1 percent decrease for Native American apprentices.

Figure 1. Racial demographics of Washington State apprentices

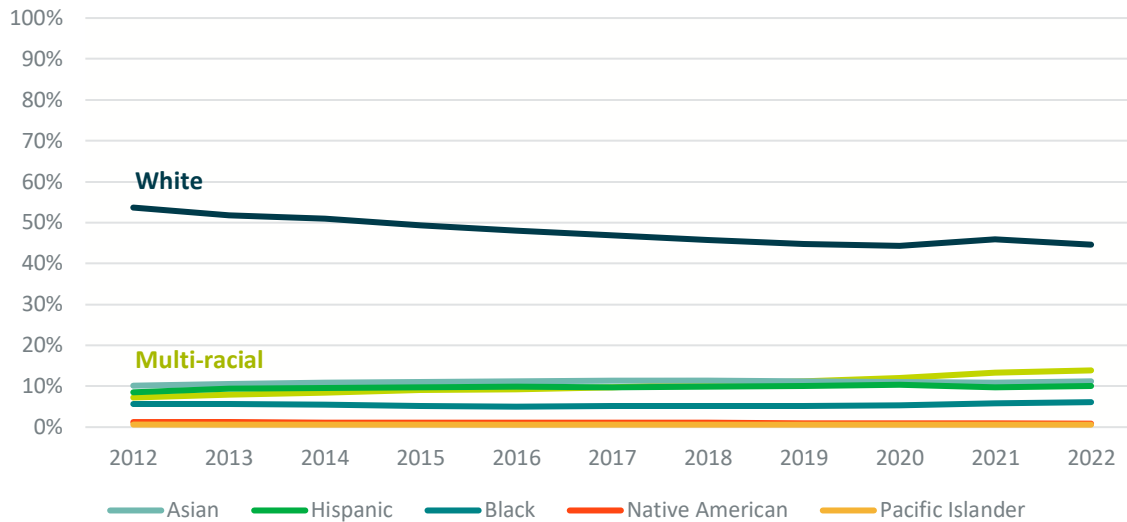


Source: Washington State Department of Labor & Industries.

As of 2022, there are around 156,000 students enrolled in Washington community and technical colleges. This is a decrease from 10 years ago, when about 240,000 thousand students were enrolled. Around 39 percent of community and technical college students are male, while 54 percent are female (6 percent are not reported). By race, 45 percent of students are White, 14 percent are multiracial, 11 percent are Asian, 10 percent are Hispanic, 6 percent are Black, 1 percent are Native American, and 1 percent are Pacific Islander (12 percent are not reported).

From 2012 to 2022, there has been a 9 percent decline in the number of White students, and a 7 percent increase in multiracial students (figure 2). For other racial and ethnic groups, there were small changes over time: a 1 percent increase for Asian, Hispanic, and Black students, and no change for Native American and Pacific Islander students.

Figure 2. Racial demographics of Washington State community and technical college population



Source: Washington State Board for Community and Technical Colleges.

Governance

The Washington State Department of Labor & Industries (L&I) oversees registered apprenticeships in Washington State. The director of L&I appoints the Washington State Apprenticeship and Training Council (WSATC) to regulate apprenticeship program standards and approve new or revised apprenticeship programs. These standards cover a wide range of topics, including program administration, qualifications for apprenticeship sponsors and instructors, and requirements for on-the-job training, related supplemental instruction, and safety and health. Employers, unions, employer associations, and others who sponsor apprenticeship programs use the online Apprenticeship Registration Tracking System (ARTS) system to register their apprenticeship programs with WSATC and L&I and to manage their program information, including apprentice registration, training schedules, and related supplemental instruction.

The Washington State Board for Community and Technical Colleges oversees Washington State’s system of 34 public community and technical colleges. They are responsible for operating budget requests and disbursing funds appropriating by the state legislature, ensuring colleges offer programs and services specified by law, establishing standards for operation, and preparing a master plan for community and technical college education.

Paths to credentials for apprentices

Credentials are an important marker of skill that can improve an individual's labor-market experience through higher earnings, greater mobility, and enhanced job security (U.S. Department of Labor, 2010). A credential is defined as a "verification of qualification or competence issued to an individual by a third party with the relevant authority or jurisdiction to issue such credentials (such as an accredited educational institution, an industry recognized association, or an occupational association or professional society)" (U.S. Department of Labor, 2010). There are many kinds of credentials, including educational diplomas and certificates, educational degrees (e.g., associate degrees or bachelor's degrees), registered apprenticeship certificates, occupational licenses, and industry-recognized certificates.

There are several characteristics of credentials that strengthen their value to individuals (U.S. Department of Labor, 2010):

1. **Industry recognized** credentials are developed or endorsed by nationally recognized industry associations or organizations that represent a large part of an industry. They can also be credentials that companies in a local area may be seeking.
2. **Stackable** credentials are part of a sequence that can be accumulated over time to build up an individual's qualifications and move them forward in a career pathway.
3. **Portable** credentials are recognized and accepted across geographic areas, educational institutions, or other industries or employing companies.
4. **Accredited** credentials ensure quality through verification from a regional or national accrediting organization.

Traditional apprenticeships

Traditional apprenticeships offer related supplemental instruction from third parties (e.g., community colleges, unions, and community-based organizations), and they often do not result in college credits or a degree. They do, however, culminate in a **Certificate of Completion for an apprenticeship program** issued by the U.S. Department of Labor or a State Apprenticeship Agency (U.S. Department of Labor, 2010). A Registered Apprenticeship Certificate is a nationally recognized credential that demonstrates an apprentice has successfully completed the apprentice training requirements outlined in the standards of the apprenticeship. Furthermore, an apprentice can obtain a **journeyworker license** upon completion of the program, which may be necessary to practice in some building trades. Journeyworker status refers to an individual who has mastered the skills, abilities, and competencies recognized within a field. Journeymen are qualified to then train and guide the next generation of apprentices through their program.

There are additional ways apprentices can earn credentials through their program (U.S. Department of Labor, 2010):

1. **Interim credentials** or certificates can be issued to an apprentice by the program sponsor based on a competency, time, or hybrid approach. These credentials demonstrate an apprentice's attainment of competency in a particular area of their trade, providing a certificate of skill before completion of their program.
2. **Occupational licenses** are required by government licensing boards to practice in certain occupations, such as construction, so apprentices may apply for these licenses during or after their apprenticeship.
3. **Personnel certifications (professional/industry certifications)** can be issued by non-governmental organizations (e.g., professional associations, companies) to indicate an individual has the necessary skills to perform a specific occupation or skill. Certificates are earned by participating in learning and work experiences, taking a certification exam, and submitting documentation of relevant experience.

These credentials help apprentices gain recognition and advance in their occupation. But while apprentices may receive interim credentials and industry certifications during their program, these are not usually translated into credits in the higher education system.

College-connected and degree apprenticeships

As states continue to look for ways to support and develop their workforces, more are considering and implementing new or expanded pathways to credentials for apprentices. Earning college credits through apprenticeship can make postsecondary education more accessible, flexible, and affordable, particularly for adult learners, job changers, and students from economically disadvantaged backgrounds (Universities UK, 2017). Additionally, providing college credit for apprenticeship training ensures those who do not complete their program can apply them toward earning a different credential (Camardelle, 2023). This is particularly important when thinking about equity in apprenticeship, as national data show Black apprentices have lower completion rates than their white counterparts (Jones & DeCarlo, 2021).

Community colleges have a strong history of providing career and technical education and are well positioned to contribute significantly to this expansion (Klor de Alva & Schneider, 2018). These institutions have a proven track record of developing and implementing training programs that effectively meet the specific needs of local employers (Tsfai, 2019). Community colleges also play a vital role in offering affordable pathways for students to obtain valuable postsecondary credentials (Tsfai, 2019). Tsfai (2019) provides a useful schematic for classifying the ways community colleges support pathways to degrees through apprenticeships (figure 3).

Figure 3. Pathways to credentials for apprentices



Source: Adapted from Tesfai, L. (2019). *Creating Pathways to College Degrees through Apprenticeships*. Education Policy. In New America. <https://eric.ed.gov/?id=ED599746>.




There are several ways colleges can provide opportunities for apprentices to earn academic credit for the classroom and/or on-the-job components of their training. Colleges can offer for-credit courses for some or all the instruction, as well as for on-the-job training, aimed at earning a credential.

- **Credit for on-the-job learning.** One method is to award credit for the on-the-job apprenticeship training. This can involve conducting a credit evaluation of a completed apprenticeship program (Tefai, 2019). The American Council on Education (ACE) is one organization that conducts such evaluations. For example, IBM and ACE partnered to translate IBM apprentices’ 12 months of on-the-job training into up to 45 college credits (IBM, 2021). IBM apprentices can use this credit at two- and four-year institutions to accelerate progression toward an associate or bachelor’s degree.
- **Credit for prior learning.** Another method is using prior learning experiences to award credit for competencies (Tefai, 2019). The term *recognition of prior learning* (RPL) refers to methods of valuing college-level learning that has taken place outside of formal educational institutions to count toward a credential (Uranis & Davis, 2020). RPL is a way to help accelerate time-to-degree for adult learners. Different methods of valuing prior learning include (Rasmussen et al., 2015; Uranis & Davis, 2020):
 - *Standardized examination*, such as Advanced Placement (AP), College Level Examination Program (CLEP), International Baccalaureate (IB), or Defense Activity Test and Examination Services Subject Standardized Tests (DSST).
 - *Faculty-developed challenge exams*, which give students credit for a specific course by taking a comprehensive exam developed by campus faculty.

- *Portfolio-based and other individualized assessments*, which allow students to demonstrate their learning through a portfolio.
- *Evaluation of non-college programs*, allowing students to receive credit based on recommendations from the National College Credit Recommendation Service (NCCRS) and ACE. These organizations evaluate training offered by the military or employers. Alternatively, institutions can conduct their own review.
- *Credit by certification*, such as industry certification or licenses.
- **For-credit courses leading to a degree.** Higher education institutions can create a degree pathway that comprises for-credit courses leading to an associate or bachelor’s degree. This degree apprenticeship would result in both an academic award and certificate of completion for the apprenticeship. In addition to for-credit courses, institutions can recognize on-the-job learning and prior learning as part of that degree pathway, ultimately creating a competency-based degree program.

A sampling of states that have established college credentials for apprentices is described in table 1. These programs provide apprentices with opportunities to earn academic credit, an associate degree, or bachelor's degree as part of their apprenticeship program.

Table 1. Selected state examples of college-connected apprenticeships

	Offering	Description
 Indiana	<u>Ivy Tech Community College of Indiana Associate of Applied Science in Apprenticeship Technology</u>	Ivy Tech’s Associate of Applied Science in Apprenticeship Technology for Ironwork Apprentices and Journeymen gives apprentices and journeypersons the opportunity to apply their apprenticeship courses towards an associate of applied science degree.
 Kansas	<u>Metropolitan Community College Degrees After Apprenticeship</u>	The college helps apprenticeship program completers fulfill credit hours needed to obtain an associate of applied science in industrial technology degree. Prior learning credits can be used to earn a bachelor’s degree in technology management at the University of Central Missouri, DeVry University, or Missouri Western State University.
 Kentucky	<u>Associate in Applied Science in Apprenticeship Studies</u>	Offered at several Kentucky community and technical colleges to completers of federally or state-approved apprenticeship programs.



[Oregon Community College
Apprenticeship Consortium
\(OCCAC\)](#)

Oregon community colleges provide related training for apprenticeship programs including associate of applied science degrees. The OCCAC manages construction trades, electrician, and industrial mechanics and maintenance technology pathways.



[University of Richmond
School of Professional and
Continuing Studies](#)

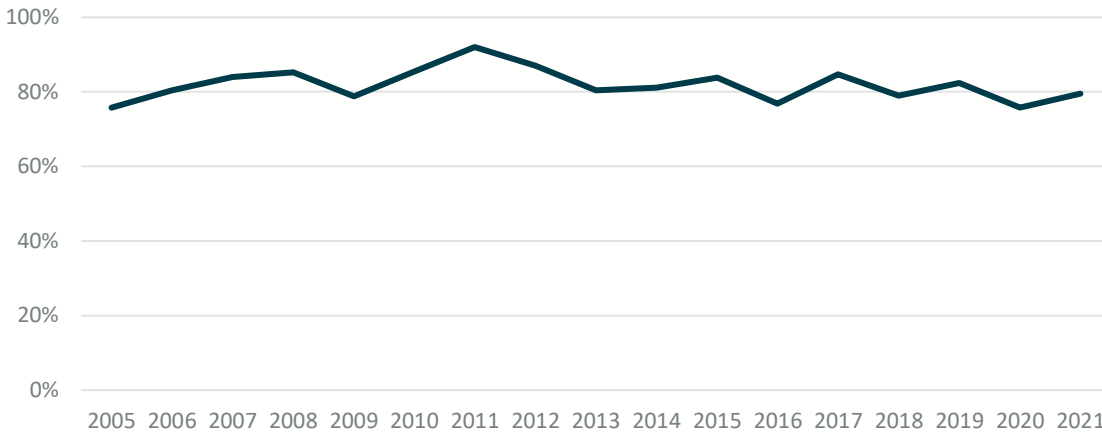
Students can earn a bachelor's degree in such fields as human resources management, information security, and paralegal studies.

Washington path to credentials

Nineteen Washington State community and technical colleges provide 80 percent of all related supplemental instruction for apprentices, having partnerships with 156 active apprenticeship programs (Washington State Board for Community and Technical Colleges, 2022). Apprentices can receive college credit for coursework at community and technical colleges. At some colleges, this credit can lead toward a Multi-Occupational Trades associate degree that can be used to transition to one of several applied bachelor's degrees offered in Washington state (South Seattle College, n.d.). In addition, Washington State offers financial assistance through the Washington College Grant for Apprenticeship. This grant supports income-eligible apprentices enrolled in approved registered apprenticeship programs and can cover tuition, fees, and materials (Washington Student Achievement Council, 2023).

Data from the Washington State Education Research and Data Center (ERDC) show that 78 percent of individuals who completed a state-registered apprenticeship since 2000 were concurrently enrolled in a Washington community or technical college. This percentage has remained mostly steady over time (figure 4). Less than 1 percent of apprentices have been concurrently enrolled in a Washington public university.

Figure 4. Apprentices' concurrent enrollment in community and technical colleges



Note: Enrollment in public universities is not included on this graph as it is less than 1 percent.

Source: Washington State Education Research and Data Center.

Though most apprentices are enrolled in a community or technical college, very few leave with a certificate or associate degree. Around 4 percent of apprentices complete a degree, most of these are certificates (3%), followed by associate degrees (1%).

Compared to general college population in Washington, the graduation rate within 150 percent of expected time at 2-year postsecondary institutions in 2018 was 53 percent (U.S. Department of Education, 2021). For a 4-year postsecondary institution, the corresponding rate is 58 percent.

Some apprentices later enroll in a Washington community or technical college after completing their apprenticeship—around 15 percent since 2000, and around 13 percent of these individuals complete a certificate or associate degree. Only around 1 percent of apprentices later enroll in a Washington public university.

The ERDC data highlights the high level of involvement of Washington public postsecondary institutions—particularly community and technical colleges—in apprenticeship training in the state. Most apprentices are already enrolled in a college or technical college, and some enroll after their apprenticeship. The data also point to a low rate of completion of degrees and certificates by apprenticeship completers during their apprenticeship training.

Apprentices' Demand for Degrees

Even with strong support from government and industry, there is little research available on potential demand for degrees among U.S. apprentices. In an exploratory survey to assess two-year associate degree students' perceptions of apprenticeships, Decker (2019) finds that students support the idea of an apprenticeship if it means they can have a transferable degree at an affordable price. Open-ended survey responses revealed that most community and technical college students seem unaware of the option of an apprenticeship, there is a strong pressure to attend college to be successful, and the affordability of the option is appealing. However, the study was limited by its small sample and focus on community college students. There is a strong need for researchers and policymakers to listen to the “voice” of apprentices, particularly in discussions and decisions directly affecting them.

Apprentice Survey

We sought to gauge the demand for degrees among Washington apprentices through a survey of apprentices. With input from stakeholders that included staff of the State Board for Community and Technical Colleges and apprenticeship coordinators, we designed and launched a survey to capture apprentices' interest in earning college degrees or certificates (see appendix A). We distributed the survey link to apprenticeship coordinators and others Education Northwest and William D. Ruckelshaus Center staff members engaged with during the project.

Though this survey fills a key gap in research in terms of gathering data on apprentices' perceptions of credentials, it has several limitations. The survey was conducted using respondents that were accessible and available to us, specifically, asking apprenticeship coordinators we had relationships with to send the survey to their apprentices. The small sample size of 69 also limits the generalizability of our survey. Additionally, respondents who are more interested in credentials may have been more likely to participate in the survey. Future surveys, interviews, and focus groups could improve understanding of apprentices' demand for degrees.

Survey sample

A total of 69 individuals responded to the survey. The sample comprised 86 percent men and 14 percent women. By race, the sample was 68 percent white, 20 percent Hispanic/Latino, 13 percent Asian, 7 percent Native Hawaiian or Pacific Islander, 5 percent American Indian or Alaska Native, and 5 percent Black. By age, 35 percent of sample respondents were 18–29 years old, 42 percent were 30–39 years old, and 23 percent were 40–54 years old. Forty-five percent had their high

school diploma or GED, 32 percent had some college, 13 percent had an associate degree, and 8 percent had a bachelor’s degree.

Apprenticeship program

Nearly all respondents are in the manufacturing or construction trades. Most respondents reported learning about career pathways from a business or their workplace (35%), friends or acquaintances (25%), word of mouth (25%), and family (22%; table 2). Very few respondents reported using Washington-specific websites for information about career pathways.

Table 2. How did you learn about the education, training, and/or experience needed to start a career, including your apprenticeship? Select all that apply.

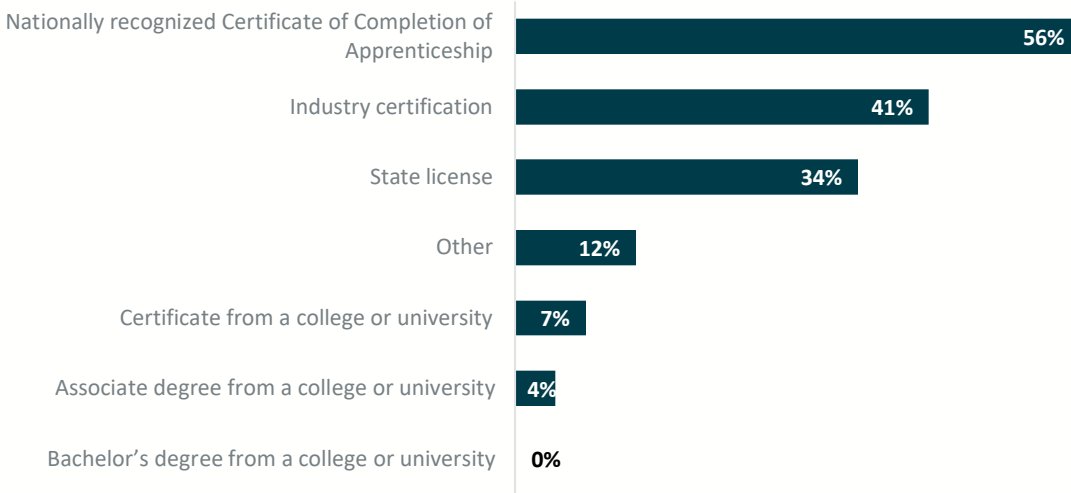
Information Source	Percentage
Business or workplace	36%
Friends or acquaintances	25%
Word of mouth	25%
Family	22%
School teacher	16%
Labor Union	12%
School counselor	6%
Google searches	6%
Other	4%
WA Department of Labor & Industries website	4%
Social media	1%
Career Connect Washington website	0%

Note: Other includes military, trades fair, and Pioneer Human Services.

Source: Washington Apprenticeship Survey, Education Northwest, 2023.

The credential most apprentices report they will earn after their apprenticeship is a nationally recognized certificate of completion of apprenticeship (56%), followed by an industry certification (41%), and state licenses (34%; figure 5). Few respondents reported they will receive a certificate, associate degree, or bachelor's degree after completing their apprenticeship.

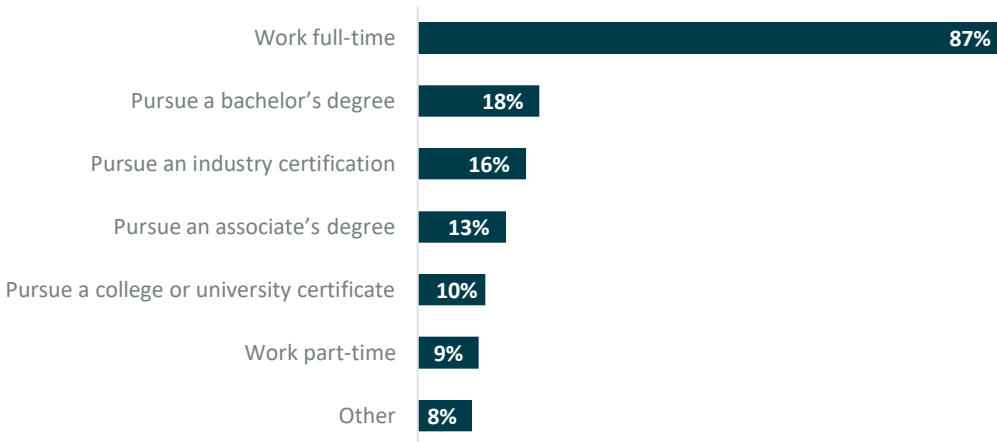
Figure 5. What credential(s) will you receive after completing your registered apprenticeship program? Select all that apply.



Note: Other includes journeyman's card and unsure.
 Source: Washington Apprenticeship Survey, Education Northwest, 2023.

Most respondents (87%) plan to work full-time after their apprenticeship (figure 6). Some are also interested in pursuing a bachelor's degree (18%) or industry certification (16%).

Figure 6. What are you planning to do after completing your apprenticeship program? Select all that apply.

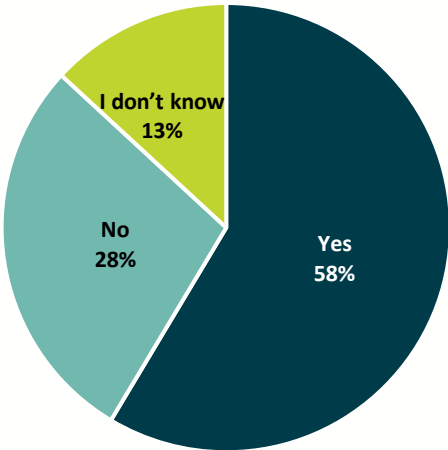


Note: Other includes starting a business, wage increase, work for nonprofit, and continue working acquiring more certification.
 Source: Washington Apprenticeship Survey, Education Northwest, 2023.

College credits

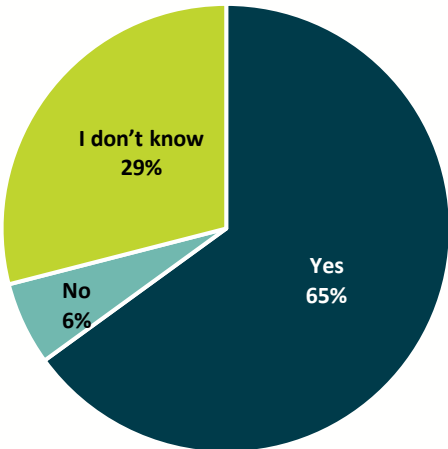
Over half of the survey respondents reported earning college credits *prior* to their apprenticeship (figure 7). Furthermore, around 65 percent of respondents report earning college credits *during* their apprenticeship (figure 8).

Figure 7. Did you earn any college credit prior to your apprenticeship?



Source: Washington Apprenticeship Survey, Education Northwest, 2023.

Figure 8. Have you earned (or will you earn) any college credit during your apprenticeship?



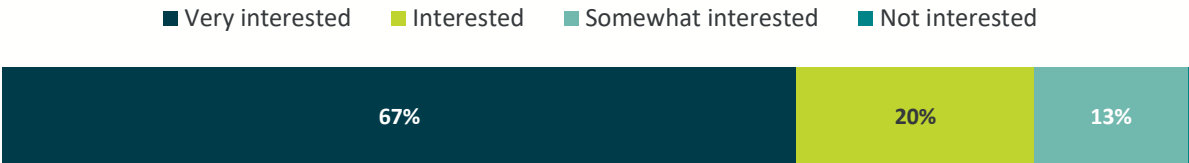
Source: Washington Apprenticeship Survey, Education Northwest, 2023.

Of those who reported receiving college credit, 81 percent reported it would apply towards a college credential, while 17 percent reported they did not know whether it would apply or not. Most respondents who reported they earned college credit said they learned about it through their college classes and teachers or their apprenticeship coordinators.

Interest in credentials

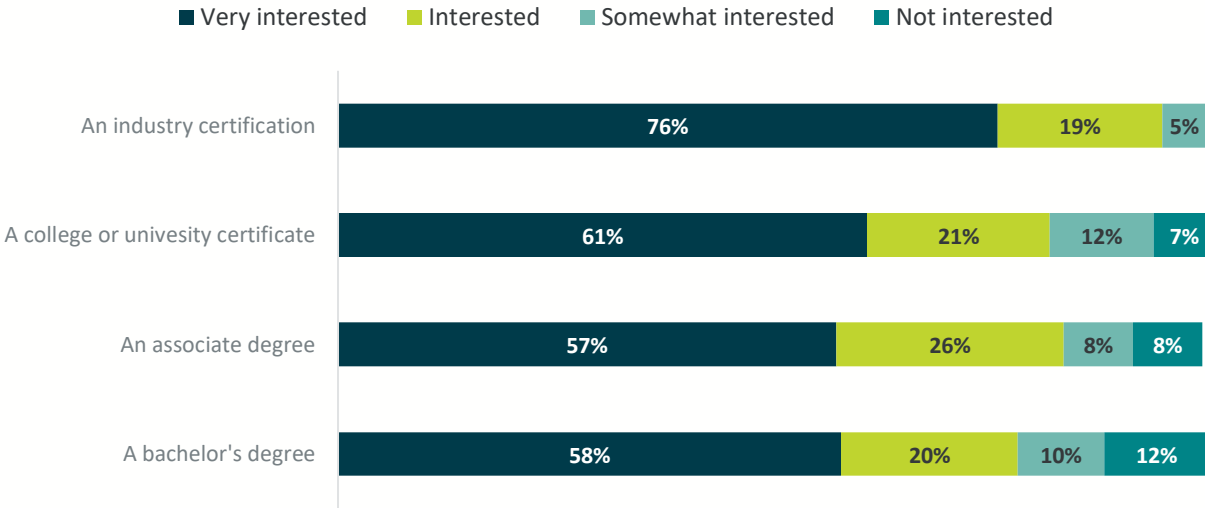
Many survey respondents are interested in receiving college credit as part of their apprenticeship program (figure 9). There is a high level of interest in receiving credentials as part of an apprenticeship program (figure 10). The credential most apprentices are interested in is an industry certification.

Figure 9. How interested would you be in receiving college credit as part of your apprenticeship program?



Source: Washington Apprenticeship Survey, Education Northwest, 2023.

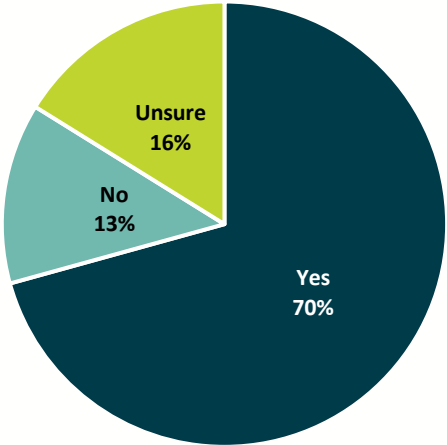
Figure 10. How interested would you be in receiving the following credentials as part of your apprenticeship program?



Source: Washington Apprenticeship Survey, Education Northwest, 2023.

Seventy percent of respondents believe earning a college degree or certificate would improve their chances for employment and career advancement (figure 11).

Figure 11. In your view, would earning a college degree or certificate improve your chances for employment and career advancement?



Source: Washington Apprenticeship Survey, Education Northwest, 2023.

Respondents were asked to describe (why or why not) they thought a college degree would improve their employment chances. Responses included having a college degree or certificate would show employers their personal growth and learning, make them more competitive, provide better pay and opportunities, help with future career advancement, and meet employers’ desire for credentials.

“It shows ability and willingness to learn and advance knowledge.”

– Survey respondent

“I know that if I have college credits, I’ll get a better salary and more job opportunities.”

– Survey respondent

“Overall, it would strengthen the attractiveness of the construction industry. This would incentivize my work and keep me interested in the trades. Additionally, earning a degree through the program would create an advantage for these programs as they offer a more credible and valuable acknowledgement of experience.”

– Survey respondent

“Because it’s becoming a very common dilemma in the work force, where employers value a college degree over experience. So, I’d rather just have it since it’s what people care about most.”

– Survey respondent

“Allows me to further my education if I were to change careers.”

– Survey respondent

A few respondents shared that real-world experience is better for their occupations, or that college credentials are not necessary to advance in their careers.

“The manufacturing industry is no longer as interested in college degrees and certifications as it used to be. Real world experience and job skills are the most desired traits that I have consistently seen employers looking for.”

– Survey respondent

“The journeyman's card is all I will need.”

– Survey respondent

“I already own an AAS Degree in CNC Machining, that isn't why I got hired though, I got hired because of my skills/ability to understand what I was doing. Not my certificate.”

– Survey respondent

Funding models

This section describes funding models for postsecondary credentials for apprentices - reimbursement systems, tuition waivers, startup grants, and financial aid. One of the foundational sources funding models is New America's Center on Education and Labor 2019 report *Solid Foundations: Four State Policy Approaches for Supporting College Connected Apprenticeships*. The report's author, Michael Prebil, interviewed staff from state government agencies and colleges across 12 states to summarize their apprenticeship-related instructional funding approaches.

Reimbursement systems




Reimbursement systems allocate state funding to cover instructional costs for education providers (Wilson & Mehta, 2017; Prebil, 2019). This process involves establishing a formula based on RSI contact hours or a full-time equivalent student rate. Throughout the year, local education agencies report the hours of RSI they provide, and in turn, they receive reimbursement from the state. One significant advantage of using state appropriations is that it effectively reduces the instructional costs for both apprentices and employers. However, providing these appropriations can be costly for states (Prebil, 2019).

Additionally, a key challenge arises in the difference between contact hours and credit hours. Contact hours refer to the actual time a student spends in scheduled instruction, and it is measured in minutes. For example, if a student attends a class for 60 minutes, that would be one contact hour. Apprenticeships usually require around 144 contact hours, meaning students spend a total of approximately 144 hours in scheduled instruction to complete the apprenticeship. On the other hand, college degrees are usually measured in credit hours. For an associate degree, students typically need around 60 semester credit hours, and for a bachelor's degree, they typically need 120 semester credit hours. Credit hours represent the amount of credit a student receives for completing a course. A standard course generally includes one contact hour per week and two preparation hours per week.

The problem arises when colleges receive different funding rates for contact hours compared to credit coursework. This means that when a student takes a course with a certain number of contact hours, the college may receive less funding for that course than if the same course was taught with the equivalent credit hours. To address this funding difference, Texas and California have implemented a solution that allows colleges to choose the rate they prefer.

States that allocate funds for apprenticeship instruction include Texas, California, and Wisconsin (table 3).

Table 3. State examples of reimbursement systems

	Policy	Description
 Texas	<u>TX Educ Code § 133, 2022</u>	Provides state appropriations to local educational agencies and independent apprenticeship committees to support the costs of classroom instruction in registered apprenticeship programs.
 California	<u>CA Educ Code § 79149, 2018</u>	Allocates related supplemental instruction funding to local K–12 education agencies and community college districts.
 Wisconsin	<u>WI Stat § 106.05, 2021</u>	Provides a completion award to an apprentice or apprentice sponsor equal to 25 percent of the cost of tuition incurred by the apprentice or sponsor or \$1,000, whichever is less.

Under Texas Education Code Chapter 133, the Texas Workforce Commission (TWC) has the authority to allocate state funds to support the costs of related supplemental instruction in registered apprenticeship programs. The state provides an annual notice to sponsoring local education agencies about the available funds for the year, the qualifications required to apply, and the application procedures. The TWC calculates a contact hour reimbursement rate by dividing the total available funds by the statewide total number of contact hours of the related apprenticeship training instruction. In 2020, TWC supported 6,810 apprentices for a total of \$4.8 million in funding. The final contact hour rate was \$4.00 (Texas Workforce Commission, 2021).

California provides reimbursement to K–12 districts and community colleges based on the hours of related supplemental instruction they offer. The chancellor of the California Community Colleges provides an estimate of the funding needs for RSI, and the state Department of Finance determines the funding allotment and the hourly reimbursement rate. The chancellor then assigns RSI funding hours based on past use and the allotment available. At the end of the year, K–12 districts and community college districts report their actual RSI hours, and the chancellor completes the process by reimbursing them. Initially, the state reimbursed an hourly rate of RSI funding starting at \$6.77. However, in 2022, they increased the reimbursement rate to \$8.82 to align with the credit-hour reimbursement rate established by the legislature. In fiscal year 2022-23, approximately \$88 million was appropriated to support community colleges and K–12 districts to deliver RSI (California Community Colleges, 2022).

Wisconsin follows a different approach, providing reimbursement either to the apprentice or their sponsor. The reimbursement takes the form of a completion award and aims to subsidize tuition for





apprenticeships. Specifically, Wisconsin pays 25 percent of the total tuition cost or up to \$1,000, whichever amount is lower, as a completion award.

Tuition waivers

States such as North Carolina, Maine, Washington, and Florida have implemented tuition waiver programs for apprentices (Prebil, 2019; table 4). Tuition waivers benefit apprentices by either reducing or eliminating their tuition expense and encourages employers and colleges to cooperate on RSI coursework (Prebil, 2019).

In North Carolina, students who begin a registered apprenticeship within 120 days of completing high school can take advantage of the Youth Apprenticeship Tuition waiver. This waiver provides coverage for tuition expenses throughout their program. Meanwhile, in Maine, the Department of Labor plays a pivotal role in supporting apprentices. It underwrites 50 percent of the tuition costs incurred by apprentices attending public educational institutions.

Table 4. State examples of tuition waivers

	Policy	Description
 North Carolina	<u>North Carolina Youth Apprenticeship Tuition waiver</u>	Provides funding for tuition waivers that cover tuition and registration fees for high school students who enter a pre-apprenticeship or apprenticeship program while they are in high school.
 Maine	<u>Maine Revised Statutes Title 26, §3211, 6-A</u>	Covers 50% of tuition costs for apprentices.
 Washington	<u>State Board for Community and Technical Colleges Tuition Waiver Resolution</u>	Requires colleges to waive 50% of the tuition and fees for apprentices.
 Florida	<u>Florida Statute 1009.25 Fee Exemptions</u>	Requires colleges to waive 100% of the tuition and fees for apprentices.

In Washington and Florida, colleges and universities are required to waive tuition and fees for eligible individuals pursuing apprenticeships. In Washington, a 50 percent tuition waiver

significantly reduces the financial burden on apprentices. Florida goes a step further by offering a 100 percent tuition waiver to eligible apprentices.

While tuition waivers have clear benefits in terms of reducing or eliminating the financial costs associated with apprenticeships, concerns have been raised about "unfunded" waivers (Prebil, 2019). One of the main concerns is that colleges and universities may be disincentivized to provide coursework when the tuition revenue is waived. This makes building college-connected apprenticeships difficult unless colleges receive incentives to participate (Prebil, 2019).

Start-up grants

To encourage college participation in apprenticeship programs, particularly in nontraditional fields, several states have established start-up grants for educational institutions (Prebil, 2019). These grant programs serve as financial incentives and support the integration of apprenticeships into college education. However, grants may not provide sufficient long-term support for programs and instead encourage the proliferation of short-lived programs (Prebil, 2019).

States such as New Jersey and Pennsylvania have implemented grant programs (table 5) for colleges and universities, enabling them to expand their apprenticeship offerings and increase participation in nontraditional fields. One innovative example of a partnership between a registered apprenticeship and higher education is provided by Thomas Edison State University in New Jersey (Harmon, 2022). In 2021, they received a NJ Place grant in the amount of \$849,000 from the New Jersey Department of Labor to fund student/apprentices in completing their associate degree.

Table 5. State example of start-up grants

	Grant	Description
 New Jersey	<u>NJ Pathways Leading Apprentices to a College Education (NJ Place)</u>	Provides funding to cover the costs of a degree apprenticeship program, including related supplemental instruction tuition.
 New Jersey	<u>Growing Apprenticeships in Nontraditional Sectors (GAINS)</u> and <u>Pre-Apprenticeship in Career Education (PACE)</u>	Offers two competitive grants (\$7 million total) that cover training costs for registered apprenticeship programs, including related supplemental instruction.



[The Pre-Apprentice and Apprenticeship Grant Program](#)

This grant program provides funding to eligible applicants for expenses related to apprenticeship instruction up to \$3,000 per apprentice per year (not to exceed three years).

Financial aid

Apprentices can be integrated into existing student financial aid programs (McCarthy et al., 2017; Prebil, 2019). This allows apprentices to access various forms of financial assistance to support their education and can integrate with dual enrollment and college promise initiatives (Prebil, 2019).

Kentucky and Georgia, for example, include apprentices in their statewide scholarships, which are typically offered to high school students (table 6). Washington offers financial aid to low- and middle-income families to help cover college costs. The Washington College Grant for Apprenticeship is one of the most generous financial aid programs for apprentices in the country.

Table 6. State examples of student financial aid


	Policy	Description
<p>Kentucky</p>	<u>Kentucky General Assembly Senate Bill 54</u>	Allows apprentices to be eligible for the Kentucky Educational Excellence Scholarship (KEES), a statewide scholarship awarded to high school students each year they attain a 2.5 GPA or better to be used for tuition at a Kentucky college.
<p>Georgia</p>	<u>HOPE grant and HOPE scholarship</u>	Awards funding for students to earn a certificate or diploma. The HOPE scholarship is a merit-based scholarship to use for a degree.
<p>Washington</p>	<u>Washington College Grant for Apprenticeship</u>	Awards money to recent high school graduates and working-age adults from low- and middle-income families to pay for tuition, fees, and materials.

Tax credits

Some states have also implemented tax credits to incentivize employers who fund their apprentices' education (Wilson & Mehta, 2017), offsetting some of the costs associated with supporting apprenticeships (Uranis & Davis, 2020).

Illinois uses tax incentives to support apprenticeship programs (table 7). Through their tax credit program, employers can receive up to \$3,500 per apprentice.

Table 7. Examples of tax credits

	Policy	Description
 <p>Illinois</p>	<p>Illinois General Assembly Public Act 101-0207 Section 229. Apprenticeship education expense credit</p>	<p>Provides employers a tax credit of up to \$3,500 per apprentice for educational expenses.</p>

Additional sources of funding

The federal government plays a significant role in providing funds for apprenticeship programs. The Department of Labor's [Federal Resources Playbook for Registered Apprenticeship](#) (2021) outlines various funding sources available to support companies, employers, labor organizations, apprenticeship sponsors, educators, workforce professionals, intermediaries, and community-based organizations engaged in apprenticeship initiatives.

One prominent funding source highlighted in the playbook is the Workforce Innovation and Opportunity Act (WIOA). WIOA funds are allocated to support workforce development programs, including apprenticeships, with the goal of enhancing employment opportunities and promoting economic growth. WIOA mandates that states strategically coordinate their primary workforce development programs to address the needs of both job seekers and employers through a combined four-year state plan (Department of Labor, n.d.c). Washington’s workforce plan, Talent and Prosperity for All, aims to strengthen business engagement, streamline customer service, broaden system accessibility, and build a next-generation performance accountability system (Washington Workforce Training and Education Coordinating Board, n.d.). Common ways to use WIOA funding for apprenticeship include related supplemental instruction, on-the-job training, and supportive services such as transportation and childcare (U.S. Department of Labor, 2021)

Employers can also cover the education costs of their sponsored apprentices. This involves creating a combined program that provides apprentices with on-the-job training and the opportunity to earn an academic degree or certification. Table 8 showcases examples of companies that have implemented such work and education programs for their apprentices. One notable example is the Aon U.S. Apprenticeship Program, which goes beyond providing workplace training and extends its support to cover the expenses of apprentices pursuing an associate degree at a local community college.

Table 8. Examples of employer funding

Company	Program	Description
Aon	<u>Aon Apprenticeship Program</u>	Aon, a global professional services firm, provides a two-year, full-time apprenticeship program that combines work and education; apprentices attend classes at an Aon-partnered community college three days a week to earn their associate degree. Aon pays for their time in the office and in the classroom as well as for tuition, books, and fees.
Stadler	<u>Talent Ready Apprenticeship Connection</u>	Stadler, a railroad equipment manufacturing company, has a three-year apprenticeship program for high school juniors or seniors to finish high school and attend courses at a local community college to earn their associate degree debt-free.
Zurich	<u>Zurich Apprenticeship Program</u>	Zurich, a major insurance company, has a two-year apprenticeship program that covers tuition and fees for apprentices to complete either an associate degree or bachelor's degree.

National best practices

As the integration of higher education and apprenticeship is an emerging research topic in the U.S, current research and best practices are limited. What does emerge from the literature are suggested approaches and recommendations that focus on collaboration, clear definitions for student-apprentices, creating clear career pathways, and ensuring equitable opportunities for participation.

Collaboration between apprenticeship programs and educational institutions

Collaboration among colleges, employers, registered apprenticeship programs, accrediting bodies, and state agencies is critical for delivering credentials to apprentices. Identifying clear roles and responsibilities among stakeholders is important, as is creating structures and processes for collaboration. One nationally recognized model of collaboration is [Apprenticeship Carolina](#), a program within the South Carolina Technical College System that supports and promotes development of registered apprenticeship programs throughout South Carolina. The program works to ensure all employers in the state have access to the information and technical assistance they need to create registered apprenticeship programs.

Recommendations for collaboration include:

- **Engage key stakeholders**, including industry and professional associations and accrediting bodies, to design competency-based curricula for the on-the-job learning components of an apprenticeship, and to develop quality principles to guide the development of programs in high-demand fields such as engineering and health care (McCarthy et al., 2017).
- **Create sector councils** that enable employers, unions, and higher education representatives to interact on a range of sector-specific policies and practices (Goger, 2020). This working group can assess quality standards and approve training providers and programs in priority occupations.
- **Identify a lead employer-serving state agency** to ensure there is a clear entry point for employers to access resources and to gather direct employer input on training programs or other services (Goger, 2020).
- **Partnerships between colleges and universities and apprenticeship programs** are necessary to foster credentials for apprentices. The [Registered Apprenticeship-College Consortium \(RACC\)](#), run by the U.S. Departments of Labor and Education, strengthens relationships among registered apprenticeship and two- and four-year post-secondary institutions across the nation. There are currently 340 member colleges in RACC who work

through a recognized third-party evaluator (e.g., the [American Council on Education](#)) to facilitate the transfer of registered apprenticeship completion certificates to college credit (Klor de Alva & Schneider, 2018).

Define and track student-apprentices

There is currently little data on the enrollment of apprentices in higher education, making it difficult to track these students for financial support, student support, or to reward institutions for creating those opportunities (McCarthy et al., 2017). Creating well-coordinated platforms for data-sharing, research, and information among state labor and education agencies can help track participation and outcomes, as well as providing important feedback for continuous improvement (Goger, 2020).

McCarthy et al. (2017) recommends making these apprentices visible in higher education data systems by creating distinct categories of “student-apprentice” and “degree apprentice.” Creating clear definitions can allow states to recognize, track, and support these students and programs through public policy.

“A ‘student-apprentice’ is a student or apprentice who meets the definition of ‘regular student,’ as defined by the Higher Education Act, 34 CFR Part 600, and ‘apprentice’ as defined by the National Apprenticeship Act, 29 CFR Part 29.2.”

“A ‘Degree Apprenticeship’ is an apprenticeship program that meets the standards established in the National Apprenticeship Act 29 CFR Part 29 and the requirements of a postsecondary degree program as established by the relevant state education agency in the state where the program is delivered.”

– McCarthy et al., 2017

Create clear career pathways

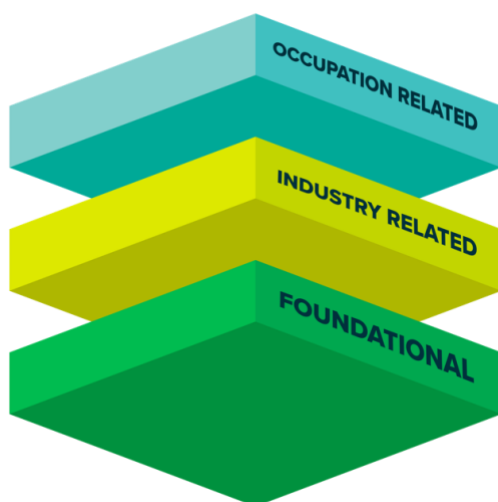
Goger (2020) recommends that state-level policy implement a policy framework that allows learners to “stack” their learning and be able to switch between pathways without having to start over. To do so, states can formalize the recognition of multiple ways of learning by establishing credit equivalencies, offering more flexible course options that align better with the needs of many students and employers, and systemizing prior learning assessment (Goger, 2020).

Examples of flexible course options include:

1. **Competency-based curricula.** This approach requires students to master clearly defined and measurable learning outcomes (“competencies”) in a time-variable environment. This departs from traditional time-based models in which all students have a defined amount of time and may experience different learning outcomes (Mathematica, 2015). The Urban Institute is building [national competency-based frameworks](#) for registered apprenticeships across occupations, which can be used to develop or refine curriculum.
2. **Micro-credentials.** These are short, competency-based recognitions that demonstrate mastery in a particular area (National Educational Association, n.d.). For example, SUNY Ulster offers several advanced manufacturing micro-credentials: pre-apprenticeship, computer numerical control (CNC) programmer, CNC operator, and computer-aided design (CAD) (SUNY Ulster, n.d.). These micro-credentials consist of several courses and can be stacked towards a degree.
3. **Modularized curricula.** This means breaking the course into smaller segments of instruction. Students accumulate credits for modules which can lead to a specific qualification (Dejene, 2019).

Because there are many possible credentials, creating a clear career pathway or ladder can be difficult. One tool that can help provide a guide to existing career pathways is the [Competency Model Clearinghouse](#) (CMC) site sponsored by the U.S. Department of Labor. On the site, you can view the latest industry models or build your own. Models are based on a tiered “building block” framework (figure 12) that represents the skills, knowledge, and abilities needed in an industry or occupation.

Figure 12. Competency model



Source: Adapted from CareerOneStop. (n.d.). *The "Building Blocks" for Competency Models*.
https://www.careeronestop.org/CompetencyModel/pyramid_definition.aspx

Ensuring equitable opportunities for participation

While apprenticeship has a proven track record of advancing workers' careers, it has historically been and continues to be less accessible to women and people of color (Toglia, 2017). In 2016, 5.6 percent of active apprentices in federally registered programs were women, 22.3 percent identified as Hispanic, and 10.1 percent as Black. Additionally, both women and people of color are overrepresented in the lowest-wage apprenticeship programs (Toglia, 2017). Unpredictable schedules, jobsites far from home, seasonal furloughs and slowdowns, and costs of schooling and tools can be challenging for all apprentices, but particularly for those with caregiving responsibilities and limited household budgets. Adding to these challenges are workplace cultures—particularly in the construction industry—characterized by hostility and harassment based on gender, race and ethnicity, sexual identity, age, and level of experience (Burd-Sharps, Lewis, & Kelly, 2014).

Equity in apprenticeships means that “learning is accessible to every student, with targeted supports for those adversely impacted by long-standing inequities in our education system and labor market” (Partnership to Advance Youth Apprenticeship, 2019). The three main components of equity, as described by the Partnership (2019), are access, inclusion, and continuous improvement.

- **Access** ensures every student can participate, which may include support for transportation and internet access.
- **Inclusion** supports diverse learners through accommodations to meet students' linguistic, physical, educational, or mental health needs. Inclusion also means all students are aware of the opportunities available through apprenticeship and encouraged to consider it as a career pathway.
- **Continuous improvement** means that programs are using data to continually evaluate their progress toward equitable outcomes, such as gaps in participation, retention, and completion.

Wraparound support services help ensure all apprentices can access and succeed in earning college credit. Example of supports can include (Tesfai, 2019):

- Free or subsidized child care
- Transportation assistance
- Financial assistance
- Academic and/or career advising
- Worksite-based classroom instruction
- Online classroom instruction (as appropriate)

Conclusion

Washington State Senate Bill 5764 set the foundation for research and collaboration to develop and improve opportunities for apprentices to receive credit towards degrees. In Washington State, most apprentices are enrolled in community or technical colleges, but do not complete a degree. However, based on the results from our survey, many apprentices show interest in a certificate or degree.

Building pathways to credentials requires ongoing connection between the higher education and apprenticeship systems. Collaborative work involves recognizing the competencies gained through apprenticeship training and providing flexible and clear pathways that accommodate the diverse needs of apprentices. Various funding models such as reimbursement systems, tuition waivers, financial aid programs, and start-up grants can support the integration of higher education and apprenticeship.

Specific opportunities for further research include conducting deeper analyses of college-connected apprenticeship programs in peer states, following up on specific research needs identified through the collaborative process facilitated by the William D. Ruckelshaus Center, and continued collection and analysis of state-level data to better capture trends in apprenticeship in Washington. Additionally, a broader distribution of our apprenticeship survey, potentially supplemented with focus groups, could help better assess apprentices' demand for credentials from a more generalizable sample.

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Appendix A. Apprenticeship Survey

Introduction

We are interested in your opinion about apprenticeships in Washington State. Your responses will be anonymous and used to help improve apprenticeships.

To find out more about why we reached out to you, click [here](#) (opens a PDF).

4. Are you at least 18 years of age?

Yes

No

5. Are you currently participating in a registered apprenticeship program in Washington State?

Yes

No

About Your Apprenticeship Program

6. What industry is your apprenticeship in?

Advanced manufacturing

Agriculture

Construction Trades

Cybersecurity

Education

Energy

Financial Services

Healthcare

Hospitality

Information Technology

Personal Services- Cosmetology, Barber, Esthetics, Manicuring

Telecom

Transportation

Other (please describe): _____

7. How did you learn about the education, training, and/or experience needed to start a career, including your apprenticeship? Select all that apply.

School counselor

School teacher

- Family
- Friends or acquaintances
- WA Department of Labor & Industries (L&I) website
- Career Connect Washington website
- Labor Union
- Business
- Social media
- Google searches
- Word of mouth
- Other (please describe): _____

8. What credential(s) will you receive after completing your registered apprenticeship program? Select all that apply.

- Nationally recognized Certificate of Completion of Apprenticeship
- Industry certification
- State license
- Certificate from a college or university
- Associate degree from a college or university
- Bachelor's degree from a college or university
- Other - Please describe: _____

9. What are you planning to do after completing your apprenticeship program? Select all that apply.

- Work part-time
- Work full-time
- Pursue an industry certification
- Pursue a college or university certificate
- Pursue an associate's degree
- Pursue a bachelor's degree
- Other - Please describe: _____

College Credits

10. Did you earn any college credit prior to your apprenticeship?

- Yes
- No
- I don't know

11. Have you earned (or will you earn) any college credit during your apprenticeship? This could be credit earned for either class instruction or on-the-job training.

- Yes
- No
- I don't know

12. Would this credit apply towards a college credential, such as a certificate or degree?

- Yes
- No
- I don't know

13. How did you find out that you could earn college credit through your apprenticeship?

Interest in Credentials

14. How interested would you be in receiving college credit as part of your apprenticeship program?

- Very interested
- Interested
- Somewhat interested
- Not interested

15. How interested would you be in receiving the following credentials as part of your apprenticeship program?

	Very interested	Interested	Somewhat interested	Not interested
An industry certification	()	()	()	()
A college or university certificate	()	()	()	()
An associate degree	()	()	()	()

A bachelor's degree	()	()	()	()
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16. In your view, would earning a college degree or certificate improve your chances for employment and career advancement?

- Yes
- No
- Unsure

17. Can you say why or why not?

Additional Apprenticeship Information

18. How have you paid for expenses related to your apprenticeship program? Select all that apply.

- I paid out of pocket
- My employer paid
- I received state grants/loans
- I received federal grants/loans
- Other (please describe): _____

19. Have you experienced difficulties in participating in your apprenticeship program? Select all that apply.

- Challenges with employer
- Life expenses
- Apprenticeship program expenses
- Family issues and obligations
- Transportation
- Health issues
- Access to childcare
- Quality of instruction
- Difficulties with related supplemental instruction
- Concern about being locked into one employer or industry
- Other (please describe): _____

Demographics

20. What is your gender?

Man

Woman

Nonbinary

Other (please describe): _____

21. What is your race/ethnicity? Select all that apply.

American Indian or Alaska Native

Asian

Black/African American

White/Caucasian

Hispanic/Latino

Native Hawaiian or Pacific Islander

Other (please describe): _____

22. Which of the following describes your age?

Under 20 years

20 to 24 years

25 to 29 years

30 to 34 years

35 to 39 years

40 to 44 years

45 to 49 years

50 to 54 years

55 to 59 years

60 to 64 years

65 years and over

23. What formal education have you had?

Some high school

High school diploma or GED

Some college

Associate degree

Bachelor's degree

More than a bachelor's degree

24. What is your ZIP code?
