

Introduction

In the early 1800s an economic and educational shift occurred that still has impact in Europe and throughout North America today. This shift was the switch from the home and/or farm being the center of production and reproduction of goods and services to a model that started to separate the workplace from the home. One of the early shifts in this economic practice was the creation of guilds in Europe, which allowed prominent families to deploy their male children to a guild, where boys and young men were trained in a trade or craft that would later become their profession and in turn help diversify the skill sets of families (Lane, 2005).

Throughout several decades of the practice of training male children in a specific trade, many families and individuals found themselves exploited by dishonest institutions and governments that maintained no surveyance over training practices such as guilds, apprenticeships, and indentured servitude practices (Douglas, 2015). As governments and societies became more aware of the problems that existed with apprenticeship-type practices, federal and state legislation was introduced, and oversight was created to support better working conditions while creating structural components that allowed apprentices rights and empowered them to have expectations of their trainers and mentors (U.S. Department of Labor, 2023). These practices have evolved to the point where governments now track labor data and participation in skilled trade training programs. These practices started in Colorado in the 1960s and 1970s, and today they have evolved to include vast metrics and data to support all job growth in Colorado (Colorado Workforce Development Council, 2020).

Colorado releases an annual report titled *Talent Pipeline Report* (Colorado Workforce Development Council, 2022). The report is intended to inform business, industry, education, government, and nonprofit entities about the progress Colorado is making in supplying workers for the Colorado economy. This report is critical to the economic future of Colorado as the state has worked for many years to develop its own talent to increase the level of postsecondary training of its current workforce. Over the past four years, Colorado has been tracking disaggregated data on labor participation rates by gender and race. The trend of women of color being underrepresented in the labor force is one that has many state offices and organizations concerned about diversifying the workforce in Colorado. This problem is not just Colorado's problem but also exists at a national level, where studies have shown people of color and women experiencing disparities in wages and aversions to entering structured work programs such as registered apprenticeships (Zessoules & Ajilore, 2018).

Table 1 depicts the trend of female participation in the workforce since 2018 (Colorado Workforce Development Council, 2022). The first year that Colorado disaggregated data by gender and race to demonstrate labor force participation, defined as "the number of people working or looking for work" (Colorado Department of Local Affairs, 2023), was 2018. While women in general participate in the workforce at a lower rate than men in each demographic group, women of color have a much larger discrepancy than men within their same demographic. Overall, Black women and Hispanic women had the lowest rates of workforce participation of any group in Colorado between 2018 and 2021.

Table 1

Colorado Labor Participation Rates, 2018–21

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Year	Black(%)		Hispanic(%)		White(%)	
	Men	Women	Men	Women	Men	Women
2021	70.6%	57%	80.4%	57.7%	73.8%	60.9%
2020	71.8%	47.1%	83.2%	62.1%	74.6%	62%
2019	78%	57.4%	78%	61%	78%	61%
2018	79.2%	65.6%	75.9%	58.2%	74.8%	61.5%

Project Purpose

With 5,500 active apprentices in Colorado this project will show how modern registered apprenticeship programs can support the diversification of workforce participants with an emphasis on women of color who are historically underrepresented in the workforce in Colorado (U.S. Department of Labor, 2023). Women of color who participate in the workforce through registered apprenticeships are not common in the United States. People of color have shown aversion to entering registered apprenticeship programs for many decades (Seleznow & McGhee, 2021). According to a study by the Urban Institute in 2017, only 7% of apprentices in the United States are women (Kuehn, 2017). Over the following 6 years that number has doubled. As of July 2023, the U.S. Department of Labor (USDOL) listed women as comprising 14% of all registered apprenticeships in the country (U.S. Department of Labor, 2023). While this number represents much needed growth, there is remarkable growth happening with Hispanic/Latinx women in Colorado.

The racial and ethnic backgrounds of all female apprentices in Colorado is displayed in Figures 1 and 2. The USDOL separates racial identification from ethnic identification. For the purposes of this project, both race and ethnicity will be included as identifiers of a person of color.

Figure 1

Female Apprentices by Ethnicity in Colorado, July 2023

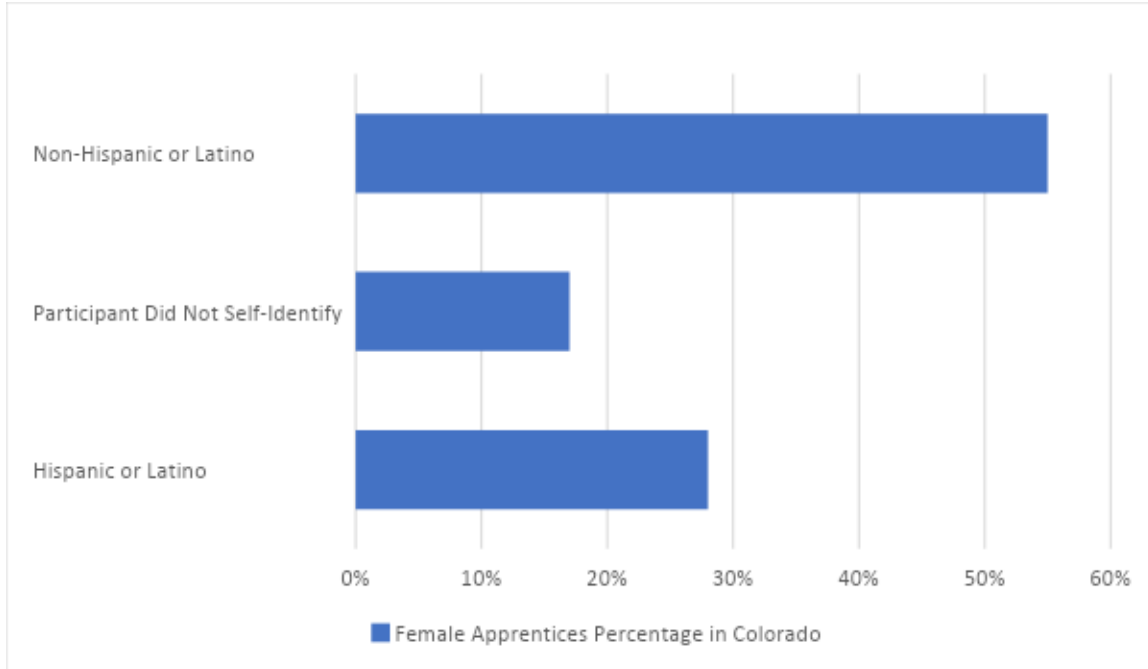


Figure 2
Female Apprentices by Race in Colorado, July 2023

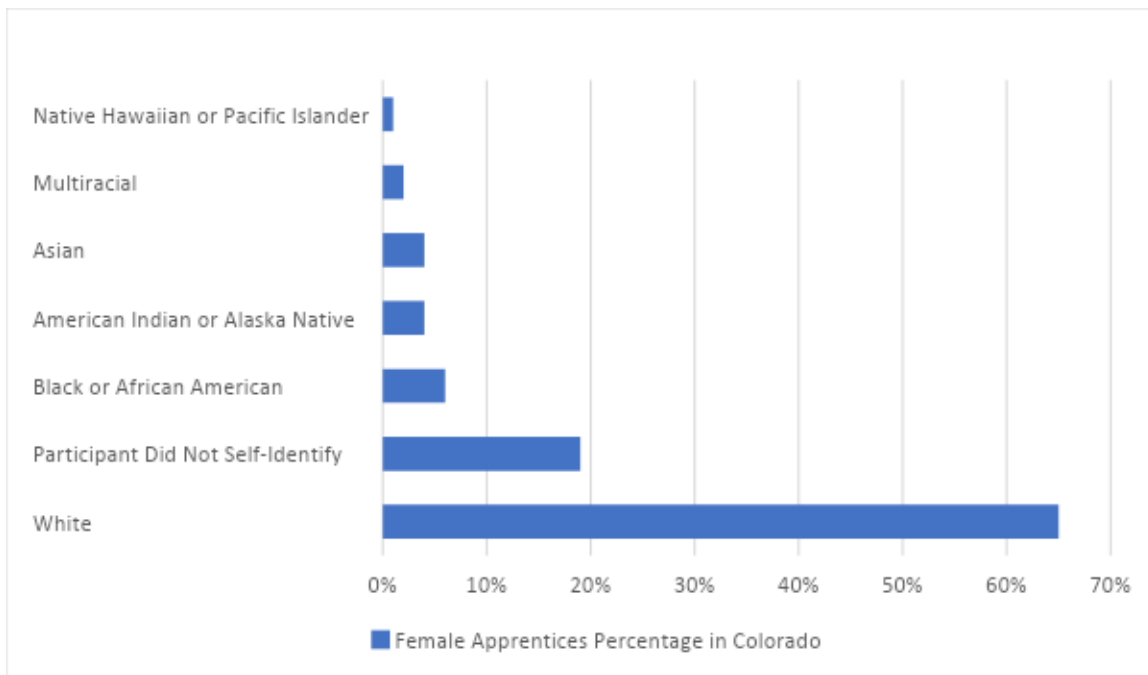


Table 2 shows that the largest group of female apprentices of color represented in Colorado are Hispanic women. Hispanic women outnumber the next largest group of female apprentices of color by more than a 4 to 1 margin. When looking at the growth rate of Hispanic women participating in registered apprenticeships in Colorado, the percentage of growth has been increasing since 2018 with 427% growth since 2013 (U.S. Department of Labor, 2023).

Table 2

Colorado Female Hispanic Apprentice Growth Rate 2014–23

	Apprentice Growth by Fiscal Year (%)									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Year Over Year	13%	2%	-6%	-4%	40%	58%	12%	31%	38%	13%
Growth From 2013	13%	16%	9%	4%	47%	131%	158%	238%	364%	427%

With an increased number of Hispanic female apprentices in Colorado and a low participation rate of women of color in Colorado, the purpose of my project is to explore how registered apprenticeships can support Colorado in increasing the labor participation rate of women of color by examining a registered apprenticeship program at Pickens Technical College in Aurora, Colorado.

Background

Pickens Technical College was founded in 1972 in Aurora, Colorado. It is located 11 miles east of downtown Denver and has served the greater Denver metro area and some parts of rural eastern Colorado for just over 50 years. Pickens is part of the Colorado Community College System and is one of three area technical colleges in the state. All programs at Pickens are short-term postsecondary certificate programs. As of July 2023, a total of 28 programs are offered on the Pickens campus. Pickens has a diverse student population with 45% of its students identifying as Hispanic/Latino, 18% as Black/African American, 5% as Asian, and 26% as White. Because this project is focused on women of color, the following illustrates how our women of color compare to the overall population at Pickens. Hispanic women make up 28% of our total student body, with 8% Black/African American women, 3% Native American women, and a total of 14% of our population identifying as women of color non-Hispanic.

Pickens is accredited through the Council on Occupational Education. Pickens began partnering with businesses that sponsored their own apprenticeship programs in 2015. In 2021 Pickens launched its own USDOL registered apprenticeship program. In 2 years, the registered apprenticeship program has grown from one occupation to five occupations and four employer partners. Pickens has focused its registered apprenticeship program to be inclusive of female apprentices. Female apprentices are underrepresented in the apprenticeship landscape in Colorado (Postolowski & Steva, 2018).

Method of Evaluation

To better understand why women of color are less likely to enter the Colorado labor force through apprenticeships, I explored through a qualitative method the USDOL registered apprenticeship program at Pickens Technical College. The apprenticeship program at Pickens Technical College has a high rate of women of color participating. Many of the apprentices had not been participating in the workforce prior to joining the apprenticeship program, and their stories and experiences of workforce participation are critical in helping employers, state organizations, other apprenticeship programs, and educational institutions understand how to support women of color (particularly young women of color) in successfully entering the workforce and maintaining employment.

This project included interviews with nine women of color who are actively participating in the registered apprenticeship program at Pickens. The interviews consisted of standardized questions that were asked of each participant to promote open dialogue between the apprentice and interviewer. Additionally, an open dialogue opportunity at the end of the standardized questions was implemented for all interviews. All of the interviews took place in person and were recorded by taking notes during the interview. After completing the interviews, each participant was allowed to review the notes of the interview and suggest changes. None of the participants elected to make changes to the notes taken during the interview.

All interviews took place on the Pickens campus while participants were either attending for related instruction or conferencing with their instructor(s) during March 2023. The setting for each interview—whether it was in the student resource center, a classroom, or a study room—was familiar for the participants. Additionally, each participant chose to be part of the Pickens registered apprenticeship program. Each was required to apply to the program, go through a screening and interview process, and then formally agree to employment with an employer partner. All names have been changed to anonymize the interview data; references for pseudonyms can be found in Table 3. Table 3 depicts the demographics of the participants.

Table 3

Pickens Female Apprentices Demographics

<u>Pseudonym</u>	<u>Age</u>	<u>Race/Ethnicity</u>	<u>Occupation of Study</u>
Sue	18	Asian	Future Teacher
Vivian	18	Asian	Future Teacher
Sabrina	18	Hispanic	Future Teacher
Maria	22	Hispanic	Pharmacy Technician
Ana	20	Hispanic	Dental Assistant
Karla	21	Hispanic	Dental Assistant
Elena	19	Hispanic	Dental Assistant
Shonda	19	Black	Future Teacher
Lupe	18	Hispanic	Future Teacher

Upon interviewing all participants, the researcher commenced an analysis of the data collected. Table 4 depicts the stages of analysis from the interviews.

Table 4

Stage	Method	Outcome
Stage 1: Getting familiar with the data	The data were read and reread for complete understanding and generating initial ideas of emerging themes.	Data were better understood.

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Stage 2: Coding comments	Codes pertaining to commonalities in responses were developed.	Initial codes were created.
Stage 3: Seeking themes	Codes were reviewed to generate themes from the data where certain phrases, common language, and similar experiences generated initial themes.	Upon this review the following themes were identified: <ul style="list-style-type: none">● Access to apprenticeships was primarily driven by educators.● Apprentices displayed high levels of belonging.● Apprentices value hands-on learning.● Apprentices value acquiring technical skills.● Career development is valued in the apprenticeship model.● Apprentices value seeing a version of their future selves.● Most apprentices had little to no knowledge about registered apprenticeships prior to joining.● Apprentices displayed strong levels of self-efficacy.
Stage 4: Reviewing themes	A review document was shared with three peers familiar with apprenticeships and/or workforce development in the United States. Each peer was given a full data set from three different interviews in this project and the initial themes identified by the researcher. Upon review, each peer provided comments to the	From this review the themes were altered and adjusted as follows: <ul style="list-style-type: none">● Apprentices had limited exposure to and knowledge about apprenticeships.● Apprentices displayed high levels of belonging.

	<p>researcher on appropriateness of themes and offered other questions and insights to help narrow the emerging themes in the research.</p>	<ul style="list-style-type: none"> ● Apprentices valued gaining hands-on experience and income while attending training. ● Apprentices experienced challenges navigating the workplace. ● Apprenticeships generate career advancement.
<p>Stage 5: Defining and naming themes</p>	<p>The researcher performed a final analysis of the data collected from the peer review and initial analysis to compile a final set of themes.</p>	<p>Final themes include the following:</p> <ul style="list-style-type: none"> ● belonging at the workplace and school ● accessing apprenticeship opportunities ● receiving hands-on training ● navigating challenges

Summary of Findings

Four main themes emerged from the data: belonging at the workplace and school, accessing apprenticeship opportunities, receiving hands-on training, and navigating challenges. Each theme has been explored using quotes from the nine interviews. All quotations have been preserved to represent their authentic meaning although there are some occasional alterations in syntax for clarity.

Belonging at the Workplace and School

Perhaps the most prominent theme throughout the study was the emergence of feelings of belonging in the workplace and at school/training. Comments such as “I feel welcomed and part of the staff” (Sue) and “I feel like part of a team” (Elena) were common throughout the interviews. Much of this belonging can be attributed to the mentorship component that exists within registered apprenticeship programs. Employers are required to assign apprentices a mentor upon hire. While each place of employment has different strategies for how mentoring occurs, the simple task of assigning a mentor to a new worker who is also typically new to the industry helps create a soft landing and an immediate support person for the apprentice on Day 1. When soft landings are created for women of color in the workplace this project has shown that high levels of belonging occur, which in turn creates a good experience for an underrepresented group of people trying to engage or reengage in the workforce.

All participants shed light on what the mentorship experience was like for them. One of the apprentices (Karla) said, “I like the mentorship from my employer. I’m thinking about going to dental hygiene school, which will pay me more and allow me to keep working in the dental field.” This evidence suggests that because of the mentoring received at the workplace, the apprentice felt supported to advance in the oral health field by training for a position that would pay her more and in turn allow her to keep working in the field. Without this sense of belonging and support in the workplace Karla may never have decided to pursue more training and a higher wage in her chosen career.

Maria spoke about the importance of other mentorship in her experience: “I get regular check-in and coaching from my supervisor.” The use of the word “coaching” in the context of an apprenticeship model is exactly what apprenticeships are designed to do. Maria’s experience of getting regular coaching from her supervisor and also having regular check-ins allowed her to feel that she was wanted at her place of work and that her employer was investing time in her.

All nine participants demonstrated belonging in some form as an important part of their experience as apprentices. Belonging is an essential part of our well-being as humans (Baumeister & Leary, 1995). It is even more paramount for people of color to feel belonging in the workplace (Taylor Kennedy & Jain-Link, 2021).

Accessing Apprenticeship Opportunities

For women of color to access opportunities with structured mentorship and belonging practices they must have access to opportunities such as apprenticeships that offer this type of support. As illustrated previously the number of women accessing apprenticeships is far lower than the number of men accessing apprenticeships. Eight of the nine apprentices did not have knowledge about apprenticeships prior to learning about them through the educational system. The one apprentice (Elena) who did have previous knowledge of apprenticeships explained that she “heard about them before from my dad and brother . . . but I thought that they were only for men.” It is interesting that the one apprentice with previous knowledge of apprenticeships received that knowledge from men in her life and that she believed because of her gender she did not have access to that opportunity. Elena went on to say, “I didn’t know about the dental apprenticeship until someone told me about it in class.” Without clarifying in another setting that apprenticeships were available to Elena, she may have never known that she could access apprenticeships.

It is imperative to educate younger generations about apprenticeship opportunities, and this project bears out that equipping educators, counselors, and advisors with apprenticeship information is an essential strategy to engage women of color in apprenticeship opportunities. Every apprentice involved in this project learned about the apprenticeship opportunity from a person or system in education that equipped them with knowledge about accessing the opportunity.

Another method that can help increase access to apprenticeships is peer referral. One apprentice (Sabrina) discovered information about the apprenticeship because a “friend signed up, so I did too.” Peer-to-peer relationships help young adults network and plug into opportunities they may not already be aware of, as evidenced by Sabrina’s experience.

Receiving Hands-On Training

Hands-on training is more than skill development or skill acquisition. Although many skilled trades take hundreds or thousands of hours to master, other hands-on training is also valuable in an apprenticeship experience. All nine participants in this project disclosed at least one level of hands-on training they valued throughout the apprenticeship experience. One apprentice (Lupe) disclosed “having time management skills is essential” while describing her experience of working and still taking classes. Without experiencing work and school simultaneously this hands-on training would not be possible. Two other apprentices (Karla and Ana) also expressed the importance of time management. Time management is proven to be one skill needed to successfully complete school and work/apprenticeships regardless of occupation (Christiansen et al., 2019).

Other apprentices participating in the future educator apprenticeship explained the importance of learning classroom management techniques and how that was an important skill they did not have early on in the apprenticeship. Sue explained that “it was hard to know . . . what to expect in the classroom.” Later Sue reported improvement because she was “creating relationships with students and teachers.”

The hands-on training also affected apprentices in health pathways. While describing one of the challenges of the apprenticeship, Maria stated that her challenges were “inputting prescriptions, learning the whole system and getting familiar with it.” Although some health pathway apprentices had challenges, Ana stated, “I feel so much further ahead of other students in my class because I’m getting to do the real job before finishing all of my school.”

Navigating Challenges

The fact that all nine of these women of color accessed and successfully participated in a registered apprenticeship program is some level of evidence of their ability to navigate challenges. Yet, each apprentice still experienced unique challenges either at work or in their related training that helped them become more resilient in their pursuit of employment in Colorado.

Shonda, who was in the future educator apprenticeship, explained that one of the classrooms she worked in “had the permanent teacher quit and had many substitutes before getting someone permanent.” This experience led Shonda to have several challenges throughout her apprenticeship. She further elaborated, “When the teacher left at the beginning of the year and I didn’t know what was really supposed to happen in the classroom . . . I tried to help the substitutes figure things out, but it was still a very slow process.” Duckworth’s (2016) research on grit and perseverance are the exact skills Shonda demonstrated during her apprenticeship. By staying committed to her classroom and her students, Shonda was able to persevere through a major challenge in the apprenticeship.

Two apprentices (Elena and Lupe) reported not feeling being treated as equal. While each report was not tied directly to race or gender difference, each apprentice’s disclosure of navigating the challenge of not feeling equal is concerning. Even within a highly structured program such as registered apprenticeships, it is impossible to avoid unfair treatment of apprentices in the workplace. The Pickens registered apprenticeship program has mandatory training on unlawful harassment in apprenticeship programs. This training is intended to protect apprentices while they are on the job and help them understand offenses that are reportable to program leadership should such incidents occur. Other employees at apprenticeship sites are not

required to participate in this training. The Pickens program works diligently to place apprentices in supportive work environments. Despite these reports, it is encouraging that both apprentices who reported unfair treatment in this project successfully completed their apprenticeships and have maintained employment in Colorado.

Recommendations

Interviews have a way of shedding light on solutions in areas that tend to be complicated or misunderstood. Compiling these quotations into a more comprehensive picture of what is working with this group of women of color in participating in the workforce has provided some key recommendations for advancing apprenticeships with women of color.

Registered apprenticeship programs should be involved in creating a space for belonging in the workplace. This sense of belonging enhances the workplace experience as evidenced by this project and is a critical component for promoting women of color to enter or reenter the workplace. Training institutions (such as community colleges or technical colleges) that support or administer apprenticeship programs should also be cognizant of including belonging activities and environments to support women of color participating in their programs.

For states such as Colorado that have a shortage of women of color in the workforce, increasing access to apprenticeship programs is an effective strategy to increase the number of women of color participating in the workforce. Focusing on occupations that are aligned to female workers is one strategy that apprenticeship sponsors and government organizations should consider further to support the participation rate of women of color in the workforce.

Registered apprenticeship programs and training programs should pay special attention to attracting women of color into their program. This project bears out that women of color thrive in hands-on training environments. Whether the hands-on training was difficult or helped to advance the apprentice in their career, ultimately all apprentices spoke to the value of acquiring hands-on experience and developing skills sets that set them apart from others in the workforce and helped them to advance in their careers. Career advancement and skill development support continued engagement in the workforce, which in turn supports the participation of women of color in the workforce and supports the diversification of apprenticeship programs and women of color in hands-on training programs.

Programs such as apprenticeships can be a support mechanism to help women of color navigate the challenges in the workplace more successfully as they offer mentorship, administrative support, and related training. The ability to navigate challenges in the workplace and throughout life is a critical skill for all people and even more critical for women of color, who in many states are underrepresented in the workplace.

Additionally, this project has opened the door for further research into apprenticeship experiences. Further research projects may include diversifying occupational offerings for registered apprenticeship sponsors by examining the expansion of current occupations offered and tracking the opening of new occupations as a way to accelerate the participation of women of color. Research could also be conducted by examining the practices of registered apprenticeships with high rates of female participation and determining what additional findings contribute to the success of women of color in their apprenticeship programs. Finally, states or specific trade organizations should consider studying employers' best practices for retaining

female workers with an emphasis on the experience of women of color. This research would broaden the scope of this project and provide greater insight on how women of color can successfully be retained in the workplace.

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