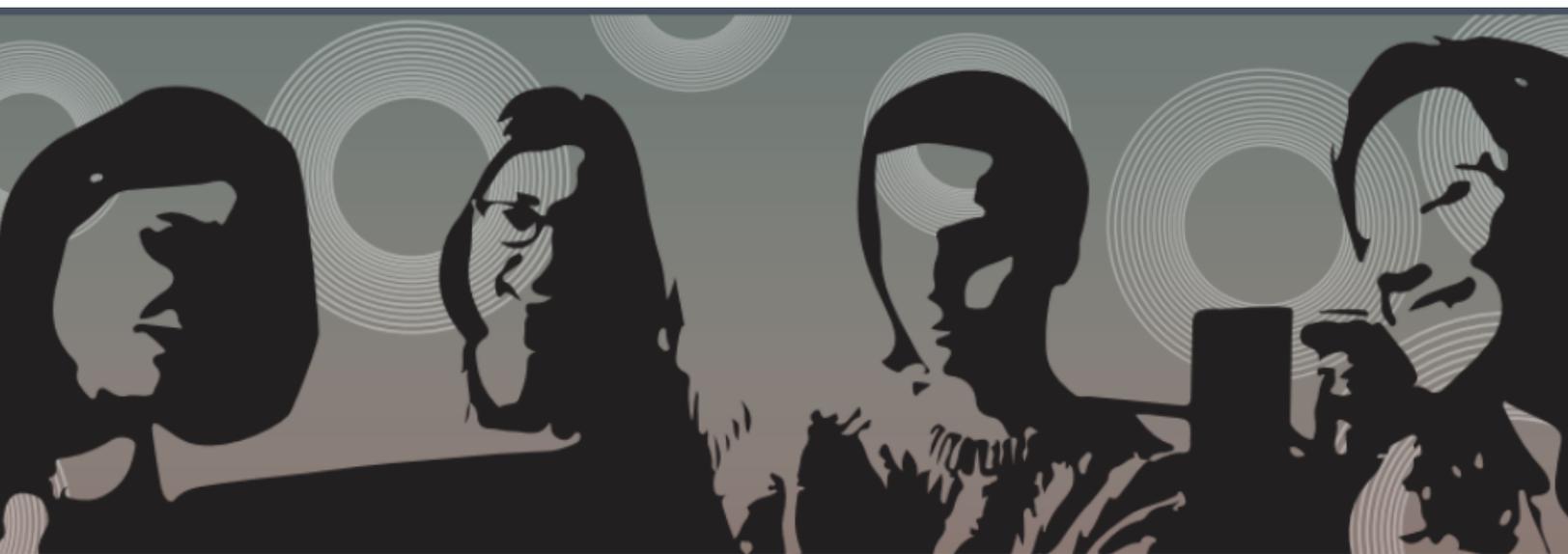


21st Century Learning Ecosystem Opportunities: Research and Findings



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Executive Summary

The 21st Century Learning Ecosystem Opportunities (21 CLEO) research was launched to increase understanding of the complexities of learning ecosystems. This report is a summary that aims to share insights about working learners employed in frontline service work, the types of education and training initiatives offered to them, and the outcomes from participating in such employer supported education and training initiatives. The findings shared here are drawn from the collection of presentations, blog posts, and other publications through which we have shared our insights along the way (cited throughout), as well as new material developed as part of our final write-up. More detailed information is available on our [Web Report](#) and in the [21 CLEO blog series](#). All of the materials from our research are archived at [PDX Scholar](#). Graphics and annotations are available in the report's [interactive synthesis](#).

Throughout this research initiative, we have thought of workplace learning as ecosystems that have a constellation of factors that operate in dependent and independent ways. Figure 1 depicts how we have come to understand 21st Century Learning Ecosystems.

Ecosystems are made up of independent and intersecting elements that shift as the social context changes. Through our research we have come to understand that adult working learners, learning opportunities, supports, and outcomes are overlapping components within ecosystems that are situated within social context. Within the social context, issues such as race, language, and socioeconomics play an important role in the health of learning ecosystems. Using sociocultural and Critical Race Theory as lenses we outline our methods, approaches, values, and connections along with a summary of key findings.

Through this work we have arrived at the following recommendations:

Recommendation 1: Each element of a learning ecosystem needs to be carefully considered when designing and

Model for Understanding Ecosystems of Employer Supported Education and Training Initiatives

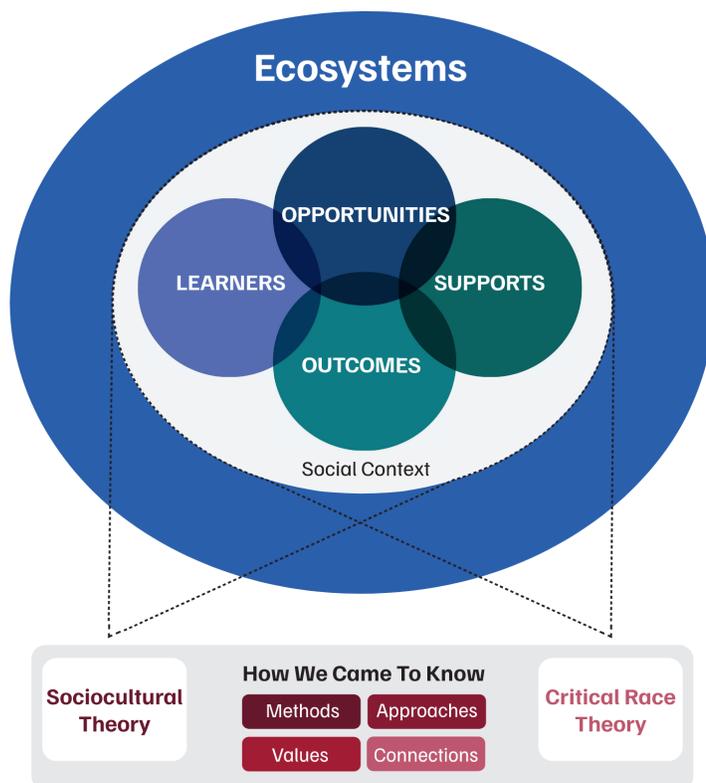


Figure 1. 21st Century Learning Ecosystems Model

implementing learning initiatives in order to support a learner's successful completion and career advancement.

Recommendation 2: The working learner needs to be understood as a key component of the learning ecosystem rather than a passive recipient, and programming needs to be aligned with the motivations and goals of working learners.

Recommendation 3: Working learners who are immigrants and refugees possess prior knowledge and skills from past educational experiences. Employers need to create the conditions for retention of these skilled workers through relevant education opportunities and equity-minded mentoring.

Recommendation 4: Working learners need both encouragement and material support from employers that are responsive to their needs - not one-size fits all.

Recommendation 5: Working learners are not always able to make the connection between the education and training initiatives offered and career advancement. Employers, education providers, and others need to help them see these connections.

Recommendation 6: All interested parties need to apply an equity lens when designing and implementing education and training initiatives and to the supports provided in order to encourage completion.

Report of Research and Findings

The 21st Century Learning Ecosystem Opportunities (*21 CLEO*) research was launched to increase understanding of the complexities of learning ecosystems. This report is a summary that aims to share insights about working learners employed in frontline service work, the types of education and training initiatives offered to them, and the outcomes from participating in such employer-supported education and training initiatives. The findings shared here are drawn from the collection of presentations, blog posts, and other publications through which we have shared our insights along the way (cited throughout), as well as new material developed as part of our final write-up. More detailed information is available on our [Web Report](#) and in the [21 CLEO blog series](#). All of the materials from our research are archived at [PDX Scholar](#). Graphics and annotations are available in the report's [interactive synthesis](#).

Research: Why And How?

Throughout this research, we have sought to elevate the perspectives, needs, and goals of the working learner, and make them visible to workforce development practitioners, policy makers, adult educators, researchers, employers, and to the adult learners themselves. The report offers a synthesis of the findings as well as links to summary graphics. In the sections that follow, the purpose, significance, and evolution of the research will be addressed to illustrate why and how we conducted this research.

Purpose: What Is The Purpose Of The Research?

The initial purpose of the 21 CLEO Research was to respond to the need for employers, educators, and policy makers to better understand (1) the characteristics of employer-supported education and training initiatives currently available to frontline service workers and (2) how to best engage these workers in the development of digital problem solving skills necessary to succeed in the 21st Century workplace (see [Introducing the 21 CLEO Project](#)). This four-year research effort was designed to be iterative in nature, meaning we expected to further develop our approach, the research questions, and research instruments, such as interviews and surveys, in response to what we learned along the way.

Iterativity in the research process resulted in four phases that were responsive to the data and also responsive to changing times. The COVID-19 pandemic, and the racial reckoning within the United States occurred during the period of data collection, each of which had a profound effect on the economy, the workforce, and society at large.

Our reporting of research insights has also been iterative and frequent. Through a consistent and frequent [blog stream](#), we have maintained transparency about our work and readily invited other education leaders, researchers, workforce development practitioners, and policy makers into dialogue that ensured the trajectory of the research remained relevant and timely. These

blog posts reflect what we understood at any given moment, and this report sets out our complete set of findings and implications that have emerged from all of the work.

Significance: Why Is This Research Important?

This research initially examined the constellation of factors that influence the 21st century learning ecosystems in order to open up opportunities for working learners' skills and knowledge development. This research makes contributions by examining three areas: opportunities, learning, and support. By examining these three factors and ways that they influence learning ecosystems, we hope that working learners' opportunities to learn can be expanded and become more flexible in response to rapid changes in the workforce and technological landscape. Moreover, we draw attention to ways working learners could be better supported on the job to learn. This work was designed to understand how to strengthen working learners' capacity to engage with others, to develop self-efficacy, and to continually learn.

Evolution: How Did The Research Evolve?

The study adopted an iterative approach that continued throughout the entire research process. Research moved through four phases:

Phase 1: A review of the field literature conducted at the same time as the initial round of semi-structured interviews and analysis. This phase resulted in initial insights about learning opportunities, learners, and why they participate in education and training initiatives. (See [21 CLEO Field Literature Review Process](#) and [All In One Place References](#)).

Phase 2: Additional interviews in additional geographic areas. A refined digital questionnaire and set of interview questions were created based on emergent understandings and new questions. Analysis of this data resulted in the creation of persona that reflect characteristics of the front-line working learners interviewed in our research (See [Persona Development as a Research Tool](#) and [Persona Development: Unpacking the Process](#)).

Phase 3: Application of a Critical Race Theory (CRT) lens for data analysis. The CRT lens helped us understand the role of systemic racism in the experiences of working learners (see [Equity Journey to CRT](#)). Based on what emerged from the CRT analysis, we conducted follow-up interviews with selected participants to clarify perceptions of working learners and gain an understanding of their long-term experiences. This process is detailed in the peer reviewed article, [Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory](#).

Phase 4: A follow-up questionnaire was sent to all working learner participants to better understand the changes they experienced over three years. Additionally, a three-part virtual convening took place with working learners and research partners. Discussions aimed to support the interpretation of our initial insights and to check that the findings were consistent with the perceptions and experiences of the participants. See [Many Voices: Participants as](#)

[Research Partners](#) for an overview of insights offered by research partners. Outcomes of these discussions and connections are featured in: (1) [The Role of the Direct Supervisor: Insights from Research Partners](#), (2) [Learning and Advancement: Insights from Research Partners](#), (3) [Missing Persona: Insights from Research Partners](#), and (4) [Limitations of Our Working Learner Persona: Insights from Research Partners](#).

Across these 4 phases of research, we arrived at findings that collectively paint a picture of employer-supported education and training initiatives and we [Synthesized and Disseminated Research Findings Digitally](#) to examine participants, learning activities, supports available, and potential outcomes.

About The Researchers: Who Conducted This Study?

The 21 CLEO research team consists of four individuals from different but related backgrounds. Each individual brought unique insights to the research process and data analysis. **Jill Castek** is a university professor and researcher who collaborates with librarians, community college educators, and other researchers to examine digital literacies acquisition and digital problem solving. **Kathy Harris** is an applied linguist, adult ESL learning specialist, and adult educator. She researches digital learning innovations and directed the Learner Web initiative, an online portal for collaboration and learning materials shared among many adult education providers. **Gloria Jacobs** is an educational researcher who explores digital literacies, digital problem solving, and learning across the lifespan from adolescents to adults within informal and formal settings. **Jen Vanek** is an ESOL scholar, teacher educator, instructional designer, and researcher whose research focuses on digital literacies, technology in instruction, language learning, and workforce development. All four researchers have worked on numerous grants and have published widely in research and practitioner journals and edited books.

Key to our work is understanding our positionality, especially as we turned to Critical Race Theory (CRT) as a way to understand the data we were getting. As white women we are limited in our understanding of the lived experience of working learners who are Black, Indigenous, or People of Color. We approached CRT recognizing that we cannot and should not speak for Black, Indigenous, or People of Color. Rather, we hoped that CRT would help to illuminate structural aspects of racism that we, as white people, have been apt to miss. [Equity Journey to CRT](#) outlines our longstanding commitment to adult education as a way of creating a more just and equitable society.

The research team was assisted by graduate assistants and interns who helped with the initial field review of the literature, writing blog posts, creating graphics, organizing the data, and conducting analysis. The team was also assisted by a communications team who helped us maintain the blog series and share our work.

Ecosystems: What Makes Up Ecosystems?

Throughout this research initiative, we have thought of workplace learning as ecosystems that have a constellation of factors that operate in dependent and independent ways. Figure 1 depicts how we have come to understand 21st Century Learning Ecosystems.

Ecosystems are made up of independent and intersecting elements that shift as the social context changes. Through our research we have come to understand that adult working learners, learning opportunities, supports, and outcomes are overlapping components within ecosystems that are situated within social context. Within the social context, issues such as race, language, and socioeconomics play an important role in the health of learning ecosystems. Using sociocultural and Critical Race Theory lenses, we outline our methods, approaches, values, and connections along with a summary of key findings.

Ecosystems operate best when all the elements work together. Although a learning ecosystem can continue to function when one or more elements is not fully functioning or is absent, the health and sustainability of an ecosystem may suffer and the ability of working learners to succeed and advance may be limited. As such, the contributions of the various members of an ecosystem (including working learners) need to be valued and their efforts should be appreciated. Additionally, when creating education and training initiatives, interested parties should acknowledge the impact of change, systemic issues of race, and learners' individuality as key facets.

Model for Understanding Ecosystems of Employer Supported Education and Training Initiatives

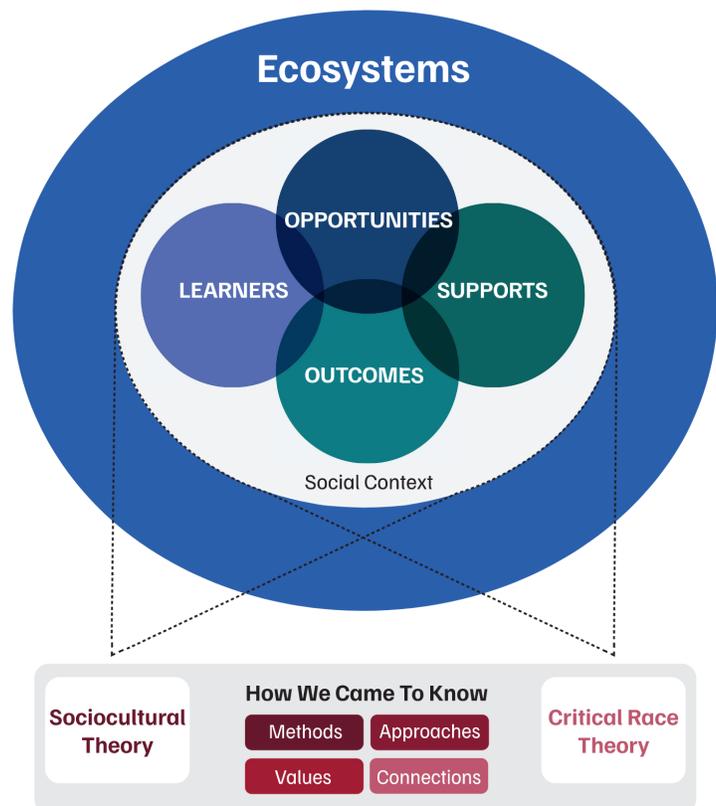


Figure 1. 21st Century Learning Ecosystems Model

Features: What Are The Features Of Learning Ecosystems?

Through our research we have come to define learning ecosystems through consideration of 1) the learning goals of working learners, 2) the initiatives offered by employers and other organizations, 3) how working learners are active participants in an ecosystem, and 4) how learning ecosystems are complex and dynamic.

Learning Goals

Early in our research, data helped define employer-supported education and training initiatives based on the goals of the learner (see [Defining Employer Supported Learning Opportunities](#) and [Naomi: Learning for Future Possibilities](#)). The data revealed five categories of learning goals (see figure 2). Details about these learning goals were summarized in [Digital Literacies in the Workplace: Exploring Employer Provided Education Opportunities and Learner Motivations](#).

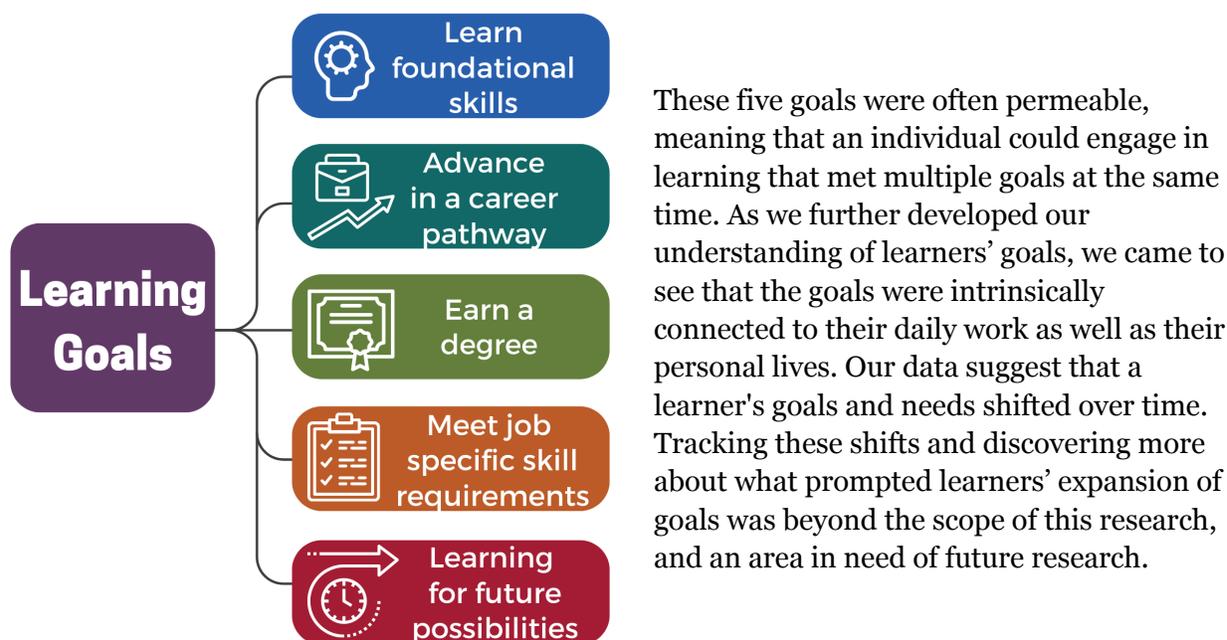


Figure 2. Five categories of learning goals

Education Initiatives

Analysis of ecosystems also involved an examination of what characteristics of education and training initiatives resonated with working learners (see [Examining Perspectives of Immigrant Working Learners & Education Providers](#)). This analysis showed that while individuals within organizations strove to support working learners, support tended to occur at the level of individual practice and did not acknowledge systemic racism as a problem. The data did suggest that working learners appreciated and benefited from the personal touches of individuals within the sponsoring organization, as described in [The Little Things Add Up](#). Aspects of the ecosystem

that lie outside the control of individuals, such as systemic racism, tended to undermine the potential success of working learners.

Working Learners Are Active Participants

To fully understand the ecosystem, we prioritized the lens through which learners interpret their experience (see [Ecosystem of Workplace Education and Training: Where Do Learners Fit?](#) and [Working Learners in a Working Learning Ecosystem](#)). We also examined their motivations (see [Digital Literacies in the Workplace: Exploring Employer Provided Education Opportunities and Learner Motivations](#)). Data analysis led us to think about learners' resilience and perseverance, the strategic choices they make, and the independent learning in which they engage. We saw that learners make strategic decisions about where they want to put their time and effort, and that learning often is done outside the confines of employer supported programs.

Ecosystems Are Complex And Dynamic

A review and synthesis of the peer-reviewed and field literature around employer-supported education and training initiatives revealed that while the term “learning ecosystem” was commonly used, it was rarely defined (see [What Is a Learning Ecosystem?](#)). In order to build a working understanding of the concept of the learning ecosystem, we considered how the term originated from ecological studies. In the natural world, living and nonliving things interact as a system within their environment—and can have a dramatic impact when one element changes. Similarly, [Urie Bronfenbrenner](#) used the ecological model of human development to envision how the different aspects of the environment and individual characteristics interact during a person's development. These concepts helped us develop an understanding of a learning ecosystem as being made up of multiple components that interact on a constant and shifting basis, as outlined in [What Is a Learning Ecosystem?](#).

We came to the conclusion that similar to ecosystems found in the natural world, learning ecosystems have no center but instead respond as a whole when a change is made to any of the components. Furthermore, we concluded that the working learner needs to be a key component of the learning ecosystem rather than a passive recipient of a system designed and handed down by organizations.

Sustainability: What Makes Learning Ecosystems Sustainable?

Similar to natural ecosystems, learning ecosystems need to be sustained. The data indicate three key components of a sustainable learning ecosystem. First, learners need to be engaged in opportunities that they see as valuable. Second, employers need to value and appreciate the participation of working learners in education and training initiatives. Third, employers, educators, and others involved in supporting working learners need to help those learners make connections to their job or see how learning will help in advancement (see [Learning and Advancement: Insights from Research Partners](#)).

Considerations: What Is Important To Consider About Learning Ecosystems?

Our research indicates that there is no single model of what a learning ecosystem looks like. Learning ecosystems are complex and differ across contexts. Our data and analysis explicitly point out that systemic issues, such as racism, play an important but often unacknowledged role in the health of a learning ecosystem. There are many types of working learners, and they are an intrinsic part of the learning ecosystem and are agentive in their learning. They weigh the benefits against the time required, level of convenience, and potential outcomes and then they act of their own accord. When organizations are examining the educational and training initiatives being offered, it is important to consider how the working learners will take up what is offered and fit the initiative into their own lives and goals.

In sum, learning ecosystems are not fixed but fluid. What is contained in a learning ecosystem is shifting and changing given the contexts and conditions in the economy, society, and in workplaces.

Participants: What Do The Data Tell Us About Working Learners?

Because centering the working learner voice is a priority of this research, we spent much time analyzing data to better understand who frontline service working learners are, how they want to learn, and what their goals are when they engage in learning. In this section we discuss what the data tells us about working learners.

Characteristics: What Are The Characteristics Of Working Learners?

Our findings point to four characteristics of working learners that are especially important. An insight that emerged early in our work is that it is important to not essentialize working learners. No two learners are the same and all have their unique set of needs, goals, and desires. The data also show that working learners are agentive. That is they make decisions based on their unique circumstances, so they should be given choices that best meet their needs, goals, and desires. Working learners are also self-efficacious. Each individual has the capacity to learn, and all learning is a growth process. Finally, because of the unique needs and preferences of working learners, education providers and employers need to listen to learners' desires and goals and design learning with their needs in mind rather than presenting one-size-fits-all programming.

Persona: What Do Persona Of Working Learners Illustrate?

A challenge of presenting what we learned about working learners was the need to describe working learners as more than the single archetype that we saw represented in articles and reports we read in field reports (see [So, Why Persona?](#)).

Conducting interviews helped us understand that each working learner is unique with respect to their goals and preferences, prior education, and access to learning opportunities. We created persona, which is a type of composite description that allows for the transferability of our findings. These persona provide context for others to understand the findings and also provide a counterpoint to the simplistic way that working learners have been described in literature.

Our approach was to write six persona, built through an empirical qualitative process, each one representing many participants (see [Persona Development - Unpacking the Process](#)). The persona drew data from multiple interviews with working learners across the country and in a variety of industries including retail, healthcare, hospitality, and food service (see [What Factors Shape 21st Century Workplace Learning?](#)). Each persona is a story that illustrates a broader perspective and describes a type of working learner who is participating in an employer supported education and training initiative. Each persona, as shown in figure 3, includes not only characteristics of working learners and their goals, but also factors impacting learning, supports and barriers, and how learning relates to the job.

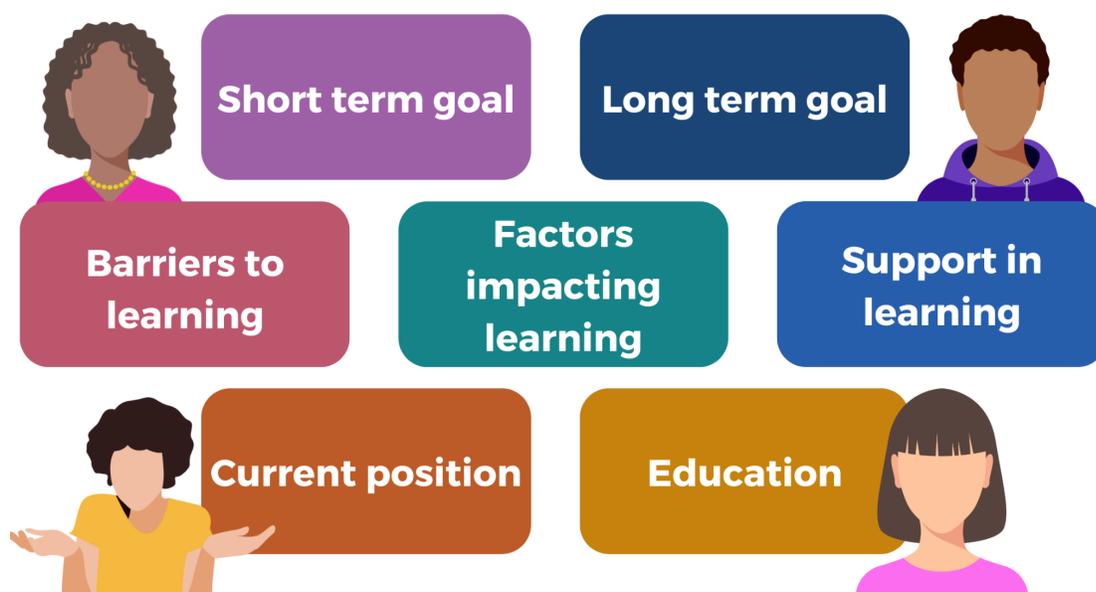


Figure 3. Characteristics of Persona

We analyzed data and clustered our analysis into six persona.

- Neberu had some high school education, and was learning English as a foundational skill as preparation to move into a new career or start a business. (See [Neberu: Working to Feel Comfortable Interacting with English Speakers](#)).
- Alimayu had a 4-year degree but was working in low wage work with the goal of improving their English and returning to their former career. (See [Alimayu: College-educated Retail Worker Learning English](#)).

- Elise had a high school diploma and some college courses. (See [Elise: Juggling Work, Required Training, and Long-Term Goals](#)).
- Regina had a high school diploma, some college courses and a credential, and was struggling to balance work, family, and learning. (See [Regina: Healthcare Worker Seeking to Establish a Career](#)).
- Dani had a 4-year college degree and was engaged in employer supported learning opportunities to improve current job performance and build skills to move up in the same career. (See [Dani: Front-Line Supervisor Paid Hourly Seeking Certification for Advancement](#)).
- Naomi had a 4-year college degree and engaged in available learning opportunities for personal growth, to stretch their expertise, skills, and knowledge. (See [Naomi: Learning for Future Possibilities](#)).

Discussion of these persona unfolded across a series of convenings with interested parties (see [Many Voices: Participants as Research Partners](#)). While the persona were appreciated and seen as useful by research partners, they offered helpful feedback summarized in [Missing persona: Insights from Research Partners](#) and [Limitations of Our Working Learner Persona: Insights from Research Partners](#).

Considering Intersectionality: What insights does Critical Race Theory Reveal?

The racial reckoning in the United States triggered by the murder of George Floyd along with the racial and socioeconomic disparities made apparent by the COVID-19 pandemic were important occurrences that took place during the context of this study. We widened our lens and used Critical Race Theory (CRT) to understand the experiences of working learners during these trying times (see [Adult Literacy and Learning: What Does Analysis Based on Critical Race Theory Reveal?](#)).

Using CRT analysis, we considered how race/ethnicity, language, and gender may have contributed to the differing experiences and opportunities offered to the working learners we interviewed who were Black, Indigenous, and People of Color. Specifically two of the individuals whose data we examined closely experienced success, but the four other individuals could not advance. (See [Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory](#)).

When querying the data, we asked whether language discrimination played a role. We questioned whether or not formal or informal employer-supported education and training initiatives and mentoring was offered. We asked whether gender or race was a factor. Although our data did not allow us to definitively respond to these questions, our analysis pointed to the role that systemic racism and other forms of discrimination play in how individuals experience learning and job advancement (see [When Enthusiasm for Learning Isn't Enough](#)).

Access to social capital was a key factor for those who experienced career advancement. More specifically, the active support of a direct supervisor helped working learners make necessary connections between their learning, their current job, and future career opportunities (see [The Role of the Direct Supervisor: Insights from Research Partners](#) and [The Little Things Add Up](#)).

Persona: So What?

Our research demonstrates that working learners are not unidimensional, though they are often represented as such in research and field literature. The working learners that we interviewed have different patterns of experiences, goals, and preferences for learning. They make strategic decisions about where to put their time and effort in learning, reasons for participating in employer supported education and training initiatives, and ways that they use independent digital learning to fill in the gaps. Additionally, race, gender, and language seem to play a role in who gets chosen to participate in formal learning, informal learning, and mentoring, as well as who benefits from these experiences.

We acknowledge that the six persona we developed from the data are not representative of all the different types of learners that are in the workforce. Our research partners provided additional insights into the types of learners we missed and the limitations of the persona (see [Missing persona: Insights from Research Partners](#) and [Limitations of Our Working Learner Persona: Insights from Research Partners](#)). To further address gaps in the field, we suggest that others build on this set of persona, drawing on characteristics they see within their participants.

The persona we developed suggest that educational programming should avoid one size fits all solutions. Instead, educational programming needs to be aligned with the motivations and goals of working learners. In other words, courses and programs that are a good fit for a narrow subset of learners may result in a mismatch between learners' goals and employers' goals. The cost of this mismatch is high; working learners miss out on opportunities and employers do not benefit from the potential of their workers. Mismatches may also extend systemic inequalities. Those who can take advantage of employer supported education and training initiatives are different than those who can't, and the differences often fall along racial, ethnic, gender, and linguistic lines, serving to perpetuate an exclusionary system despite the best intentions of all involved.

Opportunities: What Factors Support Participation?

As we began this work, we used the term learning opportunities to refer to the education and training initiatives offered to frontline service workers. As we read the literature, collected data, and conducted analysis, we came to recognize that what is an opportunity for some may not be open to all (see [Considering Who Has Opportunities for Training and Advancement, Complexifying Paid Learning](#)). Reports and field literature, as well as our own data indicate that different learning opportunities have different characteristics and aims. Thus we set aside the term "learning opportunities" in favor of the term education and training initiatives.

Since education and training initiatives differ from one organization to the next (see [Learning Opportunities Available to Frontline Workers](#)), we created categories of learning based on what we observed in our data. We identified informal, formal, incidental, and fluid learning as flexible and adaptable learning characteristics (see [What Do We Mean by Learning?](#)). While many of the learning initiatives were delivered online, some, such as internships, were not delivered using a technology platform. Internships and on-the-job training may involve more incidental learning such as observing colleagues or watching managers (see [21st Century Learning Ecosystem for Working Learners](#)). There were five elements common to the experiences of working learners who participated in education and training initiatives across the different categories: (1) goals, (2) encouragement, (3) flexibility, (4) choice, and (5) relevance.

Goals and Encouragement

The 21 CLEO findings solidify previous research that demonstrates that learners' goals drive motivation to engage in learning. The persona represent a range of purposes learners have for engaging in employer-supported learning activities. Additionally, when working learners receive encouragement through both the affective and material support of family, friends, and employers, they are more likely to engage and persist in whatever initiatives are made available to them. Likewise, the amount and nature of support, like financial support, learners receive while participating in learning opportunities varies greatly (see [When Enthusiasm for Learning Isn't Enough](#), [Complexifying Paid Learning](#), and [My Background is a Little Bit More Than I Am Now](#)).

Flexibility and Choice

Education and training initiatives differ in their length, scope, purpose, and modality (see [What Do We Mean by Learning?](#)). When learning opportunities of all kinds are made available to working learners, well planned initiatives can provide needed flexibility. This flexibility also allows working learners to choose those initiatives that best suit their needs.

Relevance

A constant thread in the data is that learners want to engage in continued learning, but learning needs to be meaningful and lead to advancement (see [Learning and Advancement: Insights from Research Partners](#)). Extending efforts to design flexible and relevant learning opportunities with the needs of learners in mind, is of the utmost importance.

In sum, learning opportunities are not necessarily opportunities for all learners if the characteristics and aims of the education and training initiatives do not match the goals of the working learners, are not relevant to the working learner, do not fit into the life of the working learner, or offer the working learner choices. Working learners also need encouragement and material support, not only from family and friends but also from employers. When one or more

of these elements are missing, successful completion of the learning experience or advancement is less likely.

Supports: What Supports Encourage Participation?

One of our original goals was to identify and describe support that made it possible for front line service workers to engage in and persist throughout employer-supported education and training initiatives. When reading prior literature we noticed that it described such initiatives from the perspective of those delivering the programming or those making the case for it from a return on investment perspective. These perspectives can be found in “gray literature”, also called field literature, authored by workforce development and policy organizations (see [Learning Opportunities Available to Frontline Workers](#)). This information is useful but has tended to leave out the voice of the frontline workers - the target of the intended training initiatives and supports. In contrast, the 21 CLEO research focused on how the workers themselves described the supports they received (or not) and how those buoyed their participation (or not). The data helped us identify aspects of support to which learners had access and saw as useful.

Material and Affective Supports

Research participants reported that both material and affective supports made it possible for them to engage in and persist throughout their learning activities. The specific supports availed to learners, and their effects, differed across participants, which is evident in each of our six persona. For example, the supports available to Naomi (see [Naomi: Learning for Future Possibilities](#)) appeared to increase the impact of learning and made persistence more likely by helping overcome situational, institutional, and dispositional barriers (see [Barriers to Learning, Part 1](#)); however, this was not true for all participants.

Family support was noted as important to working learners. Family members provided material support such as housing, emotional support by lightening the load of household tasks, or technical support.

Access to computers and the internet was, and will continue to be, an important learning support. Participants noted different strategies that afforded them access, including onsite computers and internet. Less common was the use of a company laptop for completion of learning material. The absence of access to the internet was also noted as a barrier. Without a laptop and stable internet access, working learners had no choice but to complete assigned work on their phones. Because phones are personal digital devices, working learners’ data plans vary. The use of a limited data plan for access learning materials, and limited screen real estate on a phone, make learning via phones more constrained. Additional research needs to address universal access and digital equity for working learners.

Free courses and paid time to learn also mattered. Learners were more likely to engage in learning if they were provided access to free courses, even if those courses were not immediately relevant or a good fit for their needs (see [Complexifying Paid Learning](#) and [“My Background Is a](#)

[Little Bit More Than What I Am Now](#)”). Furthermore, working learners shared that it was important that supervisors recognize, encourage and help them leverage training for job advancement (see [Considering Who has Opportunities for Training and Advancement](#)).

Partnerships should be widely encouraged between employers, workforce development organizations, and post secondary institutions. Partnerships that provide resources to learn, technology, and self-access learning materials benefited working learners. Career Navigators made available through local or regional workforce development organizations, nonprofits, or technical colleges were able to identify potential training opportunities. Together with a career navigator or support personnel, working learners and their advocates were better able to map out what learning opportunities were available to learners and how learning opportunities could support current and future workplace advancement.

Connections: Support from Employers and Direct Supervisors

Our data showed that supervisors play a key role in helping learners make connections between learning and advancement (see [The Role of the Direct Supervisor: Insights from Interested Parties](#)). In interviews, participants commented on whether or not they felt encouraged by their employers and supervisors, in particular (see [The Little Things Add Up](#) and [When Enthusiasm for Learning Isn't Enough](#)). Supportive supervisors actively involved or showed interest in the learners' experience. They provided opportunities to make connections between what working learners were learning and their jobs or potential future jobs. Supportive supervisors asked learners about their progress, did not schedule work shifts that conflicted with class times, allowed learning to take place on-the-clock, and in a few cases, took time to help learners make use of resources to engage in learning.

Importance of Proactive and Relevant Support

Our data illustrated that supports needed to be relevant, timely, not one-size-fits-all. Additionally, learners needed to be able to see how an opportunity could help them through challenges faced in a job. Support that participants noted as useful were offered proactively or in the moment and scaffolded success at work. For example, participants described times when their direct supervisor provided affirming feedback (see [The Little Things Add Up](#)). Similarly, supervisors helped learners build social capital by making connections between training and advancement for long-term benefit. These connections positioned learners for training opportunities and advancement (see [Considering Who has Opportunities for Training and Advancement](#)). More immediate, yet proactive, support included just-in-time learning opportunities and engagement for on the job challenges (see [Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory](#)).

Mentoring for Equity

Proactive and ongoing mentoring may be needed for historically marginalized groups. Analysis showed how the shape and scope of supports to which certain learners had access may be an equity issue (see [Considering Who has Opportunities for Training and Advancement](#) and [Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory](#)). Access to quality, relevant training and social capital positioned learners for subsequent training opportunities and advancement, but not everyone was seen as “a good fit” or afforded that access. Identifying what makes someone a good fit can be problematic because supervisors looking for ‘a good fit’ may overlook potential candidates for training and advancement who do not align with their conceptualization of ‘ideal’ working learners. Supervisor training that raises awareness of systemic racism in systems of training and advancement could help mitigate this issue.

Employer supported education and training initiatives are driven by employers’ need for a benefit, either materially (e.g. recruitment and retention of employees) or symbolically (e.g. positive branding). We thought about education and training initiatives using the concept of interest convergence, which is the idea that the interests of people of color are advanced only when those interests promote the self-interest of white people (see [Using Critical Race Theory as a Lens to Understand Employer-Supported Education](#)). As a result, new questions arose. One question is whether motivation mitigates barriers to advancement created by racialized systems. Our data indicates that simply having education, training, or supports available is not sufficient. Insufficiency can occur even if learners leveraged every available support and persisted (see [When Enthusiasm for Learning Isn’t Enough](#)).

Lack of advancement even when individuals are engaged in learning can happen for a variety of reasons. As our data shows, learners may take a class because it is convenient, but is not necessarily what they need to support career development (see [Complexifying Paid Learning](#)). For immigrants and refugees, participation was perhaps in pursuit of reclaiming professional status achieved in their home countries (see [My Background Is a Little Bit More Than What I Am Now](#)). Furthermore, we saw that learner effort and enthusiasm, when unmet by employer recognition, cannot help a learner move past racialized barriers or advance (see [When Enthusiasm for Learning Isn't Enough](#)). Collectively the data suggest that a key ingredient to learners’ achieving such success is proactive, equity-minded, and personalized support from supervisors.

The data also indicate that racial equity plays a part in the outcomes of education and training. As seen through the lens of interest convergence, when supports or education and training initiatives are offered primarily for the benefit of employers, those initiatives may not necessarily work out well for participants (see [Using Critical Race Theory as a Lens to Understand Employer-Supported Education](#) and [Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory](#)). Our data suggest that working learners may have participated in different initiatives because of convenience regardless of its

relevance, or potential to positively impact their careers or build on previous learning experiences.

Communication

Our research points to the importance of clear communication about the benefits, time, and effort needed to fully engage in learning. Such communication can ease confusion caused by different interpretations of the relevance of the learning and availability of supports, and mitigate the negative impact of interest convergence as a motivation for provision of education initiatives (see [Using Critical Race Theory as a Lens to Understand Employer-Supported Education](#)). Making expectations clear, knowing what the learners need, what strengths they bring to a position, and making clear what advancement opportunities are available as a result of completing the learning are all needed if working learners are to be successful in their learning and advancement (see [Learning and Advancement: Insights from Research Partners](#)).

Support Matters

In sum, our data suggest that beneficial supports consist of both affective and material resources that support engagement in learning and help learners with job advancement (see [Considering Who has Opportunities for Training and Advancement](#)). Affective and material supports work together to encourage learners to engage in learning. With the support of trusted supervisors, working learners may seek out new responsibilities in the workplace. Proactive mentoring and strong communication between working learners, education providers, and employers can make learning relevant and advancement paths clear. Our research indicates that learners engaged in training and education initiatives require support. If education and training initiatives are to go beyond attracting a narrow subset of learners, supports are best delivered through an equity lens.

Outcomes: What Does Participation In Learning Lead To?

The 21 CLEO research findings suggest that participation in relevant and supported education and training initiatives can have positive outcomes for learners. What is needed is for participation to be acknowledged by employers and for learners to be able to see the possibility of advancement. Where these things happen, worker retention at a workplace is more likely.

Employers Acknowledge Learning

Our research has also shown the importance of employers' recognition of learning efforts, and for participation in that learning to actually lead to advancement. We conducted a follow up questionnaire completed by 13 of our interview participants (see [Learning and Job Advancement: Insights from a Follow-up Survey](#)). Findings from the questionnaire suggest that alignment among a learner's goals, the objectives of training, and the employer's investments in

learning, along with supports made available, are key elements that link participation in learning to career advancement. Some working learners interviewed stayed with the same employer because that employer recognized their skill development and learning efforts, and provided support that led to advancement.

Advancement

In conversation with our research partners, we learned that it is essential for employers to create clear paths for advancement and that working learners and employers should communicate about learning progress to make this possible (see [Learning and Advancement: Insights from Research Partners](#)). If an employer knows about education and learning initiatives, and is partnered with the education provider, participants are likely to find positions upon completion of the program. However, if the working learner is using tuition assistance, the employer might not be aware of the working learner's efforts and may not have a position available when the learner finishes the program.

Additionally, many participants, especially those who were immigrants and refugees, were hesitant to raise the topic of advancement to their employers (see [Considering Who Has Opportunities for Advancement](#)). Working learners said that they felt they had to be noticed by their employer first. These participants worked independently to further their learning, often without the knowledge of their employers. In these circumstances, they risked missing opportunities for advancement because their employer was unaware of the learning in which they had been engaged (see [Learning and Advancement: Insights from Research Partners](#)).

Retention

We found that working learners' participation in education and training initiatives, combined with the supports discussed in the previous section, can result in retention of skilled frontline workers. When advancement opportunities are clear, retention appears to increase. Participants saw promising futures with their employers when their education and training activities were viewed as important. Moreover, learning opportunities were valued when working learners had a mentoring relationship with someone who could help them leverage training for advancement (see [The Little Things Add Up](#) and [Using Critical Race Theory as a Lens to Understand Employer-Supported Education](#), as well as [21 CLEO Member Spotlight to RON Innovative Learning Group](#)).

In sum, our research indicates that working learners will take advantage of education and training initiatives that are relevant and convenient for them to access, but that they might leave an employer because they did not see how support and training opportunities would lead to advancement or if opportunities arise that better align with their needs. Employers need to create the conditions for employment retention of highly skilled immigrant workers. Those conditions should include access to relevant education and training opportunities, equity-minded mentoring, and other supports.

Research Process

The 21 CLEO research findings were developed using a set of methods derived from qualitative research, goals grounded in our values, and belief in the importance of community connections. Methods include the processes or the how-to of research. How we approached the research was driven by our goals or reasons for conducting this type of research. Our values or belief systems also informed who we interviewed and whose voices were foregrounded. We encouraged collaboration by connecting with a wide range of interested parties and creating opportunities to meet and discuss what we were learning.

Participants

Interviewees were selected from a pool of participants from multiple geographic locations across the United States. Figure 4 illustrates these locations.

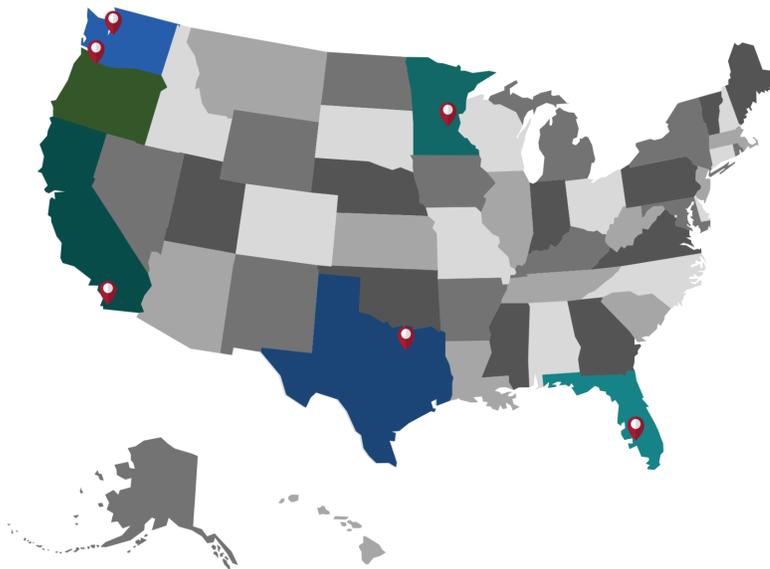


Figure 4. Geographic locations of interview participants

Each site had work-based educational programming with instructors, support service providers, and company employees who helped shape the programming. We focused on those working in retail, hospitality, restaurants, and healthcare industries, but participants also included individuals in other fields who were introduced to us through contacts in workplace development programs, adult education, or immigrant and refugee support services.

The participant pool included 27 working learners and 16 adult education instructors, support service providers, and employees who helped shape education programming. Working learners were invited to participate via email or in person. Those who responded completed a screening questionnaire and an interview. Inclusion criteria required participants' past or current participation in some kind of employer supported education and training initiative. We

intentionally over-represented immigrants and refugees, Black, Indigenous, and People of Color in that they are disproportionately represented in front-line service positions. Working learners were given a cash gift to recognize the time they gave for the interview.

To protect the anonymity of participants, and in accordance with Institutional Review Board protocols, pseudonyms were used for all participants. To ensure that findings were not influenced by the funding source, none of the research was conducted at a site that was operated by the funder. Additionally, all data collection sites have been masked in compliance with Institutional Review Board requirements to maintain participant confidentiality.

Methods: What Processes Did We Enact?

As researchers attempting to center working learner voices, we recognize the need for a critical lens to explore the perspective and experiences of our study participants alongside our own perceptions of what these participants say. Theoretical triangulation, the use of more than one theoretical approach to develop a comprehensive understanding of our data was used to better understand data from learners and support providers. Critical Race Theory (CRT) (see Bell, 1980¹) as well as Cultural Historical Activity Theory (CHAT), a theoretical module used to understand the organization and impact of systems on human behavior (see Engström, 2010²) provided us with insight into how working learners and key stakeholders articulate and perceive their experiences within a system wherein racism is endemic. Because we have always sought to move our work into the realm of social action, theoretical triangulation became a way to be true to our goal of moving beyond descriptive research.

Methods: What Tools Did We Use?

The initial round of interviews included in-person meetings with working learners, instructors, support providers, and employers in two different geographic locations. Subsequent rounds of interviews in additional geographic sites were conducted using Zoom video conferencing because of COVID-19 travel restrictions. Interviews were each conducted by two researchers and lasted an hour. Interviews were recorded and transcribed, and field notes were taken. Following each interview, the two researchers combined field notes and discussed observations which were folded into the analysis.

After all interviews were completed, a follow-up digital questionnaire was sent out to all 27 working learner participants to learn how they were doing after two years. Thirteen responded, and the insights gained are described in [Learning and Job Advancement: Insights from a Follow-up Questionnaire](#).

¹ Bell, Jr., D.A. (1980). Brown v. Board of Education and the Interest-Convergence Dilemma. *Harvard Law Review*, 93(3), 518–533. <https://www.jstor.org/stable/1340546>

² Engeström, Y. (2001). Expansive Learning at Work: Toward an Activity Theoretical Reconceptualization. *Journal of Education and Work*, 14(1), 133-156. <https://www.tandfonline.com/doi/abs/10.1080/13639080020028747>

Multiple additional interviews were conducted with seven of the 13 participants who responded to the follow-up questionnaire. These seven individuals were selected based on their availability as well as their unique perspectives and experiences. These follow-up interviews were essential to the development of our Critical Race Theory analysis.

Data Analysis

Initially data was analyzed using inductive codes that emerged from the data and was chunked into categories from which themes and insights were developed. Cultural Historical Activity Theory was used to understand the interrelationships of the various components of an ecosystem. These included the learner, the resources used to support learning, the goals of the working learner, as well as that of the employer or learning initiative, the community within which the working learner moved, the expectations for working learners, instructors, and employers, and the outcome of participation. Because one of our goals was to elevate the voice of the working learner, we focused our analysis on the working learner as an active participant within the ecosystem and developed six persona.

We then turned to Critical Race Theory (CRT) in response to the racial reckoning spurred by the murder of George Floyd as well as the socioeconomic disparities made obvious by COVID-19. The use of a second analytic framework also bolstered the rigor of the research by providing theoretical triangulation.

CRT analysis was conducted using a set of codes (thematic tags we created to help us label and organize our data) derived from the CRT literature. The a priori codes (codes developed ahead of our process of analysis) that became most readily visible were *experiential knowledge*, *endemic racism*, *interest convergence*, *community cultural wealth*, *color-blindness* and *social justice orientation*. Because the data was limited, multiple researchers on the team each coded qualitative data to increase rigor. Examining data collaboratively encourages multiple perspectives, which offers a more complete understanding of the data and supports the trustworthiness of findings. Specifically each of the researchers brought experience with different theoretical lenses to the study, and each was discussed before identifying CRT as the most useful lens for answering the research questions. An in-depth description of our process is provided in the peer reviewed article, [*Examining the Perspectives of Adult Working Learners and Key Stakeholders Using Critical Race Theory*](#).

Three years into the research, we sent a follow-up questionnaire to all working learner participants in order to identify any changes in circumstances over time. The results of this questionnaire were analyzed using quantitative descriptive statistics and are reported in [*Learning and Job Advancement: Insights from a Follow-up Questionnaire*](#). Our final set of analysis involved a review of all our insights and findings to develop a model of a learning ecosystem that captured the complexity of learning ecosystems while keeping the voices of the working learners central.

Member Checking

Interested parties consisting of instructors, support service providers, and company employees who helped shape the programming along with the working learners who responded to the follow-up questionnaire were invited to participate in the three part convening series detailed in

the blog post, [Many Voices: Participants as Research Partners](#). Seven working learners were able to participate in the convenings by meeting with us several times both individually and in pairs. For the third convening, those who were able joined the other interested parties in conversation. Their insights are shared in four blog posts: [The Role of the Direct Supervisor: Insights from Research Partners](#), [Learning and Advancement: Insights from Research Partners](#), [Missing Persona: Insights from Research Partners](#), and [Limitations of Our Working Learner Persona: Insights from Research Partners](#).

Methods: How Did We Address The Limitations OfThe Research?

We recognize that COVID–19 travel restrictions prevented the range of data collection we originally planned. Thus, our findings cannot and should not be generalized to all employer supported education and training initiatives. We sought to mitigate the limitations of a small data corpus by drawing on multiple theories and the expertise of four experienced researchers from different backgrounds. Additionally, we maintained a high level of transparency throughout the research process and regularly shared emerging insights and sought feedback from experts in the field. The series of three convenings also provided a way to check the trustworthiness of our findings and verify the transferability of those findings to the field.

In sum, we primarily drew on qualitative approaches to participant selection, data collection, and data analysis. We used two different theoretical approaches along with member checking and transparency to strengthen the rigor of the research and trustworthiness of the findings.

Approaches:What Goals Drove Our Research?

Four goals have driven our research process (see [21 CLEO Research: Paving the Way Forward](#)).

1. Listen to multiple voices: We gathered insights from different perspectives by working with advisory groups to examine and interrogate insights from our data analysis (see [Learning and Advancement, Insights from Research Partners](#)). Working with a community of research partners has helped us to draw from different perspectives, including critical perspectives, to promote a wider examination of the 21st Century workplace ecosystem.
2. Examine data systematically: Data analysis included a careful and thoughtful process for interrogating initial conclusions and linking them with corroborating evidence. Our findings represent an examination of issues from multiple perspectives to explain phenomena in an objective manner, using data as evidence as illustrated in [Working Learners in a Workplace Learning Ecosystem](#).
3. Share findings regularly: Our dissemination process involved pushing out findings widely and broadly as they became available in order to prompt discussion and inform the field. [Our blog series](#) provides a readable archive of our insights across the initiatives’s lifespan. To increase visibility of our findings we [Synthesized and Disseminated Research Findings Digitally](#). We

designed a [Web Report](#) and archived research findings, presentations, and blogs on [PDX Scholar](#). Graphics and annotations are made available in the report's [interactive synthesis](#).

4. Build capacity: Our research process aimed to expand partnerships and build extended networks. Outcomes and findings from our research were shared with interested parties, with the aim of exploring shared goals for future research and practice initiatives. Our approach focused on centering working learners' voices and advancing adult learning initiatives. Our work included capacity building with expanded partnerships, collaborations, and networks widely focused on workplace learning (see [Many Voices: Participants as Research Partners](#)).

Values: What Beliefs Informed Our Approach?

Research is not a value-free endeavor. As part of our efforts to be transparent in how we conducted the research, as well as sharing our insights and findings frequently throughout the initiative, we have also sought to be transparent in the set of beliefs that ground our research.

We believe that research should be an inclusive process. Therefore, we engaged research partners as part of the process throughout the four years of the project as well as through a series of convenings (see [Working Learners in a Workplace Learning Ecosystem](#)). Together with research partners we examined findings and sought feedback that encouraged connections across our collective work.

- [The Role of the Direct Supervisor: Insights from Research Partners](#),
- [Learning and Advancement: Insights from Research Partners](#),
- [Missing persona: Insights from Research Partners](#), and
- [Limitations of Our Working Learner Persona: Insights from Research Partners](#).

The research was also designed with the belief that it was necessary to foreground the perspectives of learners. This belief was part of the original research proposal and was further bolstered by what we saw in the field literature. In much of previous research and industry reports, working learners were relegated to being a recipient of education and training initiatives rather than being an active part. For that reason, democratizing voices was of paramount importance.

Use of the 21 CLEO blog as a communication vehicle, as well as our frequent meetings, served as a way to further our belief in equitable discourse. Though the 21 CLEO research team might have been seen as the experts and researchers, the working learners, employers, workforce development personnel, and educators were experts in the field. Thus we created opportunities, such as the convenings and other shared conversation spaces, for all voices to be heard.

Through the blog posts, the convenings, and participation in conferences and other gatherings, we sought to encourage cross-sector networks that would listen and act on what we and others were learning. These networks have built a positive momentum toward making real and lasting positive change within the world of employer-supported education and training initiatives.

Connections: How Did We Encourage Collaboration?

The foundation of this research grew out of the need to connect threads of work across researchers, practitioners, educators, policy makers, and other parties interested in education within workforce development. We've come to refer to this collection of individuals and organizations as interested parties. When connections across these areas of work can be made, the resulting outcomes can grow into a network that becomes a community of inquiry. Connected threads of work can seed new partnerships that endure and move the field forward. Our research fostered important connections that drew attention to elevating the voice of working learners (see [Convening 3: Ecosystem and Worker Voice](#)). Because we value the voice of the working learner, we have included those who became key informants as interested parties.

Throughout the research, we sought input from interested parties by sharing our initial insights, emerging findings, and ultimately our summary findings. We created opportunities to connect, reflect on the emerging insights, discuss what was being learned and ask new questions, and share what we learned with the larger community (see [Building a Culture of Inquiry](#) and [Many Voices: Participants as Research Partners](#)).

The interested parties with whom we worked shared a number of characteristics that made their feedback especially valuable. Many were invested in innovative programs focused on learning experiences and workforce development, and many had recently spearheaded new initiatives in workforce learning. As a result, they were particularly knowledgeable about approaches to employment, education, and training. Their insights and experiences helped us shape our findings by encouraging rethinking, reflection, and revisions, which led to reimagined conclusions. Ultimately, these discussions and input led to a high degree of confidence in the research findings that have been shared iteratively across the four years of the research.

Recommendations

Based on our findings, there are six recommendations for those who develop and implement employer supported education and training initiatives.

Recommendation 1: Each element of a learning ecosystem needs to be carefully considered when designing and implementing learning initiatives. When one or more elements of a learning ecosystem are missing, a learner's successful completion of the learning experience or career advancement is less likely.

Recommendation 2: Our data shows that working learners make decisions based on their life needs and are agentive when choosing what learning to engage in. As such, the working learner needs to be understood as a key component of the learning ecosystem rather than a passive recipient. Educational programming should avoid one size fits all solutions. Instead, programming needs to be aligned with the motivations and goals of working learners.

Recommendation 3: We learned that working learners who are immigrants and refugees come to education and learning initiatives with a wide range of backgrounds and education experiences. If employers want to retain highly skilled immigrant workers, they need to create the conditions for retention, such as relevant education and training opportunities and equity-minded mentoring.

Recommendation 4: An examination of supports showed that working learners need both encouragement and material support from employers. Supports provided by employers need to adapt according to the context and industry, and be responsive to the needs of working learners. Supports that work for one type of learner may not be appropriate for another type of learner.

Recommendation 5: Study participants and research partners, especially those who are immigrants and refugees, told us that they are not always able to make the connection between the education and training initiatives offered and career advancement. Employers, education providers, and others would do well to help learners make these connections, and to support learners in finding opportunities that align with their needs.

Recommendation 6: Apply an equity lens when designing and implementing education and training initiatives. Consider who can participate and who cannot, how they are able to participate, and what supports are needed to ensure participation, successful completion, and job advancement. This is especially true when thinking about what supports are needed. Education and training initiatives need multiple supports for working learners if they are to go beyond attracting a narrow subset of learners as targeted recipients or potential audience.

Conclusion

This research began with the goal of defining components that make up a learning ecosystem for frontline service workers engaged in employer supported education and training initiatives. Our research process was iterative, highly visible, and inclusive of the many viewpoints presented by our participants, research advisors, and the interested parties who we considered research partners. Because of this approach we have been able to illustrate that no singular understanding of the ecosystem is sufficient. Because of our shift to a critical lens we have been able to describe the importance of equity mindset in the shaping and delivery of any education and training initiative and the support provided. We are grateful for the collaboration of everyone who informed this work and helped us understand these conclusions. It is our hope that we have begun a conversation that will lead others to consider how to strengthen the connection between learning and career advancement of frontline service workers through provision of educational opportunities that boost learners' capacity to engage with others, to develop self-efficacy, and to continually learn.