



Evidence to Action

Integrated Education and Training (IET) in California

Introduction

In recent years, workforce shortages in the United States and California have highlighted the urgent need for a well-trained workforce and effective human capital development (Cates and Ferguson 2024; Grundy 2023; Hoeven 2022). In California, factors such as the aging population, skills mismatch, sector-specific demands, and high housing costs have impacted the worker shortage (Bohn 2014; Carver-Thomas et al. 2024; Hoeven 2021, 2022). This has led to an emphasis on workforce training for adult learners and the development and implementation of educational models that combine adult education and literacy activities such as English language acquisition and Adult Basic Education (ABE) and Adult Secondary Education (ASE) with workforce training. For adult learners to compete successfully in the job market, the Workforce Innovation and Opportunity Act (WIOA), Title II: Adult Education and Family Literacy Act (Title II: AEFLA) expanded funding opportunities to integrate workforce training into adult education and literacy activities and workforce preparation activities (113th Congress 2014). Instruction supporting the timely skills development of adult learners in California is delivered in various settings, from district-based schools and community colleges to workplace training programs. An educational model that has gained greater visibility is Integrated Education and Training (IET). IET supports career pathways development for adult learners, including English language learners; and offers aligned, integrated, and contextualized instruction and services to students.

Effective and accelerated workforce training programs such as IET can support adult learners in achieving their career objectives in a timely manner. Programs that combine literacy and numeracy instruction within job training contexts enable individuals to acquire practical skills aligned with current industry demands

while simultaneously enhancing relevant foundational academic skills (LINCS n.d.; The Literacy Cooperative 2021). Beyond technical skills, these programs can help students develop essential employability skills and career readiness, including communication, problem-solving, and teamwork.

By aligning educational content with real-world job requirements, IET aims to ensure that learners are well prepared to meet the demands of the current labor market. To this end, workforce training programs must be designed to adapt to shifting market needs, particularly in growing and evolving fields such as technology, health care, and construction. Moreover, these programs should incorporate training strategies tailored to address California's shifting demographics. The following sections describe the changing dynamics of California's workforce development landscape and the critical role of its immigrant population in meeting these challenges.

Evolving Workforce Development and Labor Market Needs in California

California's dynamic labor market is undergoing a transformation driven by technological advancements, globalization, and evolving industry needs. The state faces slow job growth and unemployment exceeding the national average, particularly among younger workers. Meanwhile, sectors like health care and construction are experiencing growth related to the state's aging population. To adapt to these changes and maintain a competitive edge, California needs a highly skilled and adaptive workforce equipped to navigate the demands of the twenty-first-century economy. This requires a focus on upskilling and reskilling workers, particularly in areas requiring critical thinking, problem-solving, and digital literacy. IET programs can play a significant role in meeting these evolving workforce needs and ensuring California's continued economic success.

Shifting Immigrant Population in California

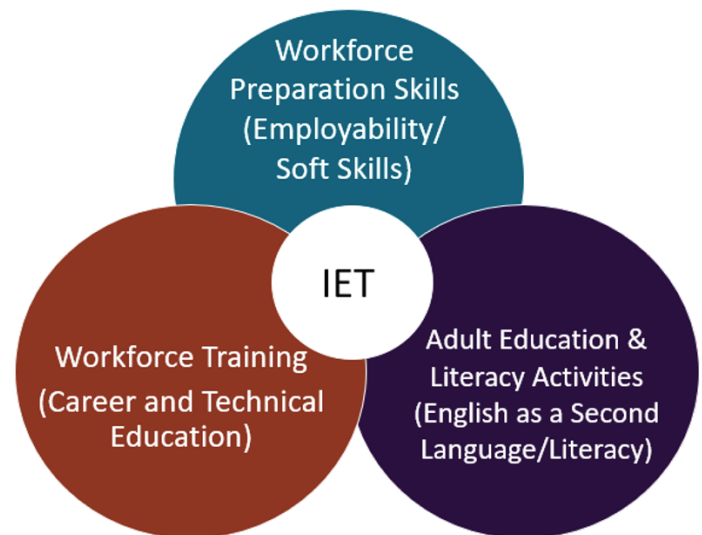
California is home to 10.6 million immigrants from dozens of countries, making up 22 percent of the nation's foreign-born population and 27 percent of the state's population, which is more than double the national average (Mejia et al. 2025). Immigrants play a crucial role in California's economy, comprising 34 percent of prime-working-age adults (ages 25 to 54) and contributing significantly to sectors like technology and health care. Despite recent shifts in immigration patterns, including slower growth and an increase in the number of highly educated immigrants, there remains a pressing need for training programs for those with limited formal education. California faces a shortage of middle-skill workers with some postsecondary education but less than a bachelor's degree (Bohn 2014), emphasizing the need for workforce development programs tailored to diverse educational backgrounds and work experiences. Such tailored career training can support adult immigrants' integration into California's dynamic economy and help the state both mitigate workforce shortages and sustain its economic vitality.

The purpose of this brief is to inspire adult education agencies in California to develop IET models based on their unique local needs and to use relevant resources to support their efforts. This brief will explore the definition and models of IET, provide an overview of the policy guidelines of the California Department of Education (CDE), outline effective program development and implementation phases, and present IET implementation examples from four adult education agencies across California. By embracing accelerated and responsive workforce development strategies, adult education agencies in California can support a resilient workforce ready to thrive in emerging and evolving industries.

IET: Definition, Policy, and Models

IET combines occupational skills training with foundational academic instruction to accelerate participants' educational and career advancement. Under WIOA Title II: AEFLA, IET delivers adult education and literacy activities, workforce preparation, and workforce training concurrently and contextually for specific career pathways (113th Congress 2014).

Figure 1. Three Required Components



Designed to transition adult learners from basic adult education to career pathways, IET programs co-enroll participants in job training and academic instruction, equipping them with both foundational and workforce skills for high-demand fields (US Department of Education 2015) (Figure 1). To be effective, IET must be industry-focused, rigorous, and supported by wraparound services that help learners navigate their career paths (US Department of Education, Office of Career, Technical, and Adult Education 2023).

IET programs create opportunities for career and educational growth. The CDE supports the implementation of IET programs through its policy guidelines, ensuring that IET programs align with industry needs and expand access to a broad range of learners.

CDE Policy Guidelines

The CDE envisions a future in which IET programs are strengthened with industry-aligned curricula that fully integrate adult education, literacy, workforce preparation, and workforce training. To achieve this vision, it is essential that IET training programs result in portable, industry-recognized training credentials. Effective communication and collaboration among students, staff, employers, and partner organizations will drive innovation, elevate instruction, and empower learners. The CDE has placed a strong emphasis on expanding access to IET programs beyond the English as a Second Language

(ESL) student population to include all adult learners in California, including those in ABE and ASE programs.

To achieve these goals, the CDE has outlined several key initiatives:

- **Expanding IET Beyond ESL:** The CDE is actively working to expand IET beyond ESL to include ABE and ASE students. This will involve developing curriculum and instructional materials tailored to these learner populations' specific needs.
- **Championing the Benefits of Bridge Programs:** The CDE is committed to encouraging providers to integrate bridge programs with workforce preparation and workplace literacy, using existing Civic Objectives and Additional Assessment Plans (COAAPs) to offer valuable skills and knowledge development that prepares students for IET programs.
- **Restructuring the Funding Model:** To strengthen IET in California, the CDE is exploring new funding models that would incentivize the growth of high-quality IET programs by providing robust funding for coplanning, professional development, and instructional resources.
- **Establishing New Payment Points:** The CDE is considering establishing new payment points for IET enrollment, credential completion, workplace literacy milestones, and employment. These payment points would incentivize positive student outcomes and boost enrollment in underperforming areas, including ABE and ASE.

The CDE's commitment is to ensure that all learners, regardless of their background, have the opportunity to participate in and benefit from transformative IET programs. By expanding access to IET, the CDE aims to create a more robust and effective IET landscape across California, ultimately empowering all adult learners to achieve their full potential.

As the CDE outlines its vision for a robust IET landscape, the practical implementation of IET programs comes into focus. Effective IET programs require innovative teaching models that seamlessly integrate adult education and literacy activities, workforce preparation, and workforce training. The next section introduces IET teaching models that are approved by the CDE.

IET Teaching Models in California

Integrating adult education, workforce preparation, and workforce training requires models beyond traditional stand-alone courses. Two common IET models—

coteaching and alternating teaching—help bridge adult education and career training, although both models offer unique benefits and challenges. Both models require instructors to coordinate and coplan instruction to truly integrate and contextualize students' learning. Each model provides unique benefits, along with challenges, related to coordination, resource allocation, and development of strong teacher partnerships.

Coteaching

In the coteaching model, an adult education instructor (e.g., ESL, ABE, ASE) and a workforce training instructor (e.g., Career and Technical Education [CTE]) teach together in the same classroom. Students enroll in both courses and receive integrated instruction in foundational and career-specific skills, often earning certificates or college credits. Workforce preparation, such as resume writing and digital literacy, may be covered by either instructor.

Opportunities

Sign up for the IET Clinic for professional development and implementation coaching support.

<https://calpro-online.org/training/integrated-education-and-training-iet-clinic>



Benefits and Challenges

Coteaching allows students to receive simultaneous foundational skills instruction and workforce training, increasing their likelihood of earning credentials and securing employment (What Works Clearing House et al. 2020). The Integrated Basic Education and Skills Training (I-BEST) model from Washington State has demonstrated strong outcomes, indicating that adult learners who completed at least one year of college credit and earned a certificate or credential had an earning advantage over those who did not (Emory et al. 2016). Research also suggests that coteaching success depends on strong teacher collaboration, and voluntary partnerships tend to be more effective than assigned ones (Thompson and Chapman

2016). Factors such as challenges related to management and logistics and different instructional approaches among coteachers can be barriers to successful implementation. Dedicated preparation time, instructional resources, and teacher training help overcome such barriers (Saclarides 2023).

Alternating Teaching

In alternating teaching, students take separate but coordinated adult education and literacy (e.g., ESL, ABE, HSE) and workforce training (e.g., CTE) courses, taught by different instructors at different times (California Department of Education 2022). The workforce preparation component can be addressed by either teacher, and the model can be combined with coteaching for added flexibility (US Department of Education, Office of Career, Technical, and Adult Education 2021).

Benefits and Challenges

Alternating teaching allows instructors to focus on their expertise while offering scheduling flexibility to the students. However, it may disrupt the students' learning continuity and require careful coordination between teachers to align lessons. Institutions often choose this model because of the lower cost of implementation compared with coteaching, which requires two instructors in one classroom simultaneously. Scheduling complexities, instructor collaboration, and professional development remain key considerations with alternating teaching.

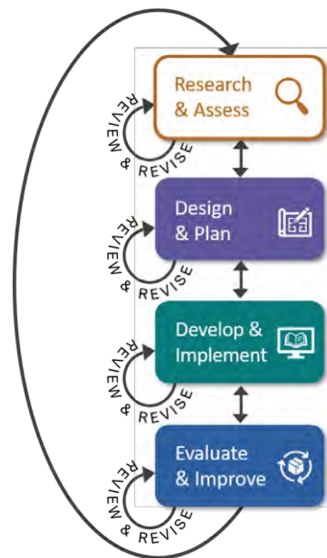
The next section highlights the four key phases of effective IET development and implementation and how these phases support the successful integration of education and training.

The Four Phases of IET Program Development and Implementation

The [Integrated Education and Training Design Toolkit](#)

provides a structured approach to developing IET programs through four iterative phases: (1) Research & Assess, (2) Design & Plan, (3) Develop & Implement, and (4) Evaluate & Improve (Figure 2). Each phase plays a critical role in ensuring that IET programs are responsive, effective, and sustainable (US Department of Education, Office of Career, Technical, and Adult Education 2023).

Figure 2. The Four Phases



well as the state and local IET policies; and determining an IET program opportunity. Prioritizing regional needs assessments in this phase can strengthen program design and increase student success.

Call to Action!

Take the IET Fundamentals self-directed course to learn more about the phases of IET implementation and the Toolkit.

<https://calpro-online.org/training/advance-integrated-education-and-training-iet-iet-fundamentals-self-directed-online>



Phase 1: Research & Assess

This initial phase involves a strategic process to evaluate regional workforce development needs; adult learner goals; gaps in training opportunities; and available resources to support an IET program, including funding and community partnerships. Key tasks for program developers include conducting a thorough needs assessments from multiple perspectives, including adult learners, to identify key insights; brainstorming to select a compelling IET program that aligns with learner and business requirements as

Phase 2: Design & Plan

In the second phase, identified partners and constituent groups (e.g., the design team) collaborate to determine the IET program's objectives that address the goals of businesses and adult learners identified in the previous phase. The design team then defines what success looks like for the program; develops the program structure; and designs learner experiences, which include effective

outreach and recruitment strategies, enrollment and intake processes, and program schedules and locations. Considering adult learners' accessibility needs is also critical in this phase. Key tasks for this phase include forming the design team; establishing program goals; creating a program structure that is sustainable; considering appropriate instructional delivery methods, funding, partnerships, communication, learner support, and program policies; and developing a monitoring and evaluation plan for the program.

Phase 3: Develop & Implement

The third phase focuses on developing integrated curricula and contextualized instructional materials that meet the established program goals. Key tasks for this phase include providing training and orientation to teaching staff and other partners; developing instructional strategies and curricula that align with industry standards and certification requirements; and creating contextualized materials that support the integration of foundational skills and occupational training, which entails developing a single set of learning objectives for the program. After the IET program launches, this phase includes collecting relevant data.

Phase 4: Evaluate & Improve

The final phase emphasizes continuous improvement by evaluating program outcomes and processes through both qualitative and quantitative data analyses. Qualitative data include student feedback, comments from focus group or individual interviews, and learner stories. Quantitative data—such as assessment records of measurable skill gains, number of earned industry-recognized credentials, transitions to employment or postsecondary education, and other data collected through surveys and rated questions—can inform ongoing enhancements. By systematically evaluating and refining the program, the design team and partners can ensure that the program remains responsive to evolving workforce and learner needs. Key tasks for this phase include analyzing collected data, presenting results to partners and other constituent groups, considering options for more rigorous evaluation, and acting on improvement strategies.

The IET Design Toolkit offers a practical and actionable framework for creating effective IET programs. By following the four phases, California adult education programs can develop and implement evidence-based programs. This iterative process not only supports adult learners in achieving their educational and career goals but also contributes to the development of a skilled workforce.

Local Practice Examples

This section showcases how four distinct adult education agencies in California have implemented IET programs. These examples highlight the innovative strategies and collaborative efforts of each agency and illustrate the key lessons learned. By exploring these varied approaches, this section aims to offer insights into the practical application of IET models and provide inspiration for other adult education agencies looking to design and implement successful IET programs.

Whittier Union Adult School

The Whittier Union Adult School (WUAS) began restructuring its career pathways in 2018–19 to make the CTE programs accessible to ESL students. The district data showed English learners had an on-time graduation rate that was 9 percent lower than non-English learners, and were 24 percent less likely to be prepared to enter a 4-year university upon graduation. These gaps were wider when accounting for gender, with male students underperforming as compared with female students. This was the WUAS's impetus for the first construction pathway course: Residential Electrician 1, designed to appeal to young adult males and to offer them access to a living wage.

Partnering with the local America's Job Center of California and the Electrical Training Institute (ETI), WUAS used an alternate teaching model to integrate math and English skills into the program, allowing students to transition smoothly into ETI's Journeyman Electrician apprenticeship program.

In 2023, WUAS participated in a national Advanced IET Design Camp, focusing on creating integrated IET syllabi for all courses. Professional development time was allocated for teachers to develop these syllabi that combined academic and CTE skills. This approach was applied to the Medical Assistant class in 2024; targeted language support led to improved outcomes. Expanding support to all students boosted the class completion rate from 67 percent to 85 percent.

Moving forward, WUAS plans to implement Comprehensive Adult Student Assessment Systems (CASAS) testing in all CTE pathways and embed language support across programs. In spring 2025, ESL teachers will coteach in phlebotomy classes; similar support will expand in construction pathways, including plumbing and electrician programs.

Santa Ana College

Santa Ana College School of Continuing Education offers Certified Nursing Assistant, Personal Caregiver, and Lab Assistant (Biotech) programs. Dental Assistant, Community Health Worker, and Surgical Technologist programs are in development.

The English Language Learner (ELL) Healthcare Programs Pathways Team, comprising CTE, ESL, and counseling members, develops health care certificate programs for English learners. Supported by the ELL Healthcare Pathways Grant, the team integrates language support and ensures program alignment with labor market needs.

Success is measured by coursework completion, number of certifications earned, and rate of employment at livable wages. The program follows a six-phase model (Appendix).

1. In Phase 1, which is Recruitment/Awareness, all team members work collaboratively to bring awareness and build interest in program offerings to prospective students.
2. In Phase 2, which is Enrollment in Courses, students receive a presurvey to begin the data-collection process for grant requirements and key outcome measures.
3. In Phase 3, Coursework & Support, students receive one-on-one advising sessions and faculty-led resource sharing.
4. In Phase 4, Practical Experience, students are exposed to career preparation services, including health care employment workshops, career fairs, and mock interviews. Language and workforce skills are integrated in Phases 3 and 4, with ESL faculty aligning coursework and counselors supporting career readiness.
5. In Phase 5, Certification, students prepare for state certification exams.
6. In Phase 6, Transition to Employment, students are encouraged to participate in events that may lead to employment and/or expansion of the students' networks.

A well-coordinated core team is essential, with early planning for communication, data sharing, and collaboration. To address scheduling challenges, the team holds recurring meetings with structured agendas to ensure effective program implementation and student support.

Charles A. Jones Career and Education Center

In spring 2024, Charles A. Jones (CAJ) launched the Pharmacy Clerk IET program to meet local labor market needs. Developed by ESL and Pharmacy instructors, the program supports English learners entering the pharmacy field. Initially lacking an orientation session, the pilot phase revealed the need for structured onboarding, including a CASAS reading requirement. Insights from the CALPRO IET spring clinic helped refine ESL and CTE integration.

Following the pilot, outreach was expanded through flyers, social media, and schoolwide sessions to attract a larger student pool. To enhance readiness, a preclass orientation was introduced. Students received course details, with listed potential barriers, and took CASAS tests before classes began. Students also received organized binders with Pharmacy and ESL materials, including a program calendar to support time management.

Course content was adapted from the Pharmacy Technician curriculum, incorporating real-world pharmacy scenarios and customer interactions. Instructors emphasized communication skills through role-playing and COAAPs on Pharmacy and Soft Skills. Although students learned technical skills, many faced self-confidence issues in verbal communication, which affected the number of job applications. To address this, the CASAS score requirement increased to 218, and the program extended from eight to 10 weeks to allow more speaking practice. A post-assessment of CTE skills is being developed to validate student readiness, boost student confidence, and refine the curriculum based on performance trends.

Sweetwater Adult Education

Sweetwater Adult Education is committed to accessible IET programs for all English proficiency levels. Launched in 2017 with WIOA funding, the program started as an opt-in model with one CTE course per site. It has since expanded to all CTE courses across the four adult school locations.

Early evaluations identified access barriers, leading to the removal of the Test of Adult Basic Education (TABE) in 2018. This decision was made because requiring a minimum score on the TABE denied students with low literacy skills entrance into CTE courses. The CASAS assessment is now used instead, improving efficiency and access to IET programs while capturing more comprehensive data. The CASAS STEPS (Student Test of English Progress and Success) assessment is used for ESL students, while the CASAS Reading GOALS (Greater Opportunities for Adult Learning Success) is used for ABE and ASE students.

To enhance placement accuracy in medical pathway courses, Sweetwater administers the CASAS assessment within two weeks of the start of the CTE class to identify students' reading comprehension levels. This early assessment provides additional instructional resources to support learning.

In fall 2022, a comprehensive orientation was added to cover prerequisites, assessments, and consortium pathway options. Friday intervention classes were also introduced to help ELL students meet certification requirements. The intervention classes achieved a higher participation rate than other classes (e.g., Citizenship, ABE/ASE, Computer, Culinary Arts), demonstrating their value to the program.

These changes have substantially increased enrollment, improved placement accuracy, and boosted certification rates. To further support ELL students on the health care pathway, premedical terminology and prehealth care essentials classes will be introduced.

Sweetwater sustains program quality by investing in teacher training and collaboration. The school sends teams to CALPRO IET clinics each semester and ensures protected collaboration time for CTE, vocational ABE, and IET instructors. IET teachers receive an additional hour of collaboration time in addition to the two to four hours of weekly collaboration time built into teachers' regular work week. Through continuous reflection and adaptation, the program remains focused on meeting students' evolving needs, particularly in the medical pathway.

Conclusion

The need for a well-trained workforce in California is becoming increasingly important. As the state continues to evolve from shifting demographics, labor markets, and technological advancements, implementing accelerated educational models like IET is critical. As evident in the implementation examples, these programs not only help meet workforce demands but also empower individuals to take charge of their career pathways.

With coteaching and alternating teaching models, IET programs offer practical solutions to accelerated, accessible, and industry-aligned education, ensuring adult learners are equipped with the necessary employability and technical occupational skills. While challenges remain, such as greater initial costs of implementation and coordination, the ongoing efforts by the CDE to expand and strengthen IET programs demonstrate a commitment to creating pathways to success for all learners. The transformative potential of IET to improve the lives of adult learners makes it a valuable investment. As more IET programs are implemented, states and local programs can continue to gather data to track progress and refine their approaches to ensure they address evolving labor market needs as well as support learner goals.

Call to Action!

Visit the IET Virtual Workroom for resources, videos, and professional development.

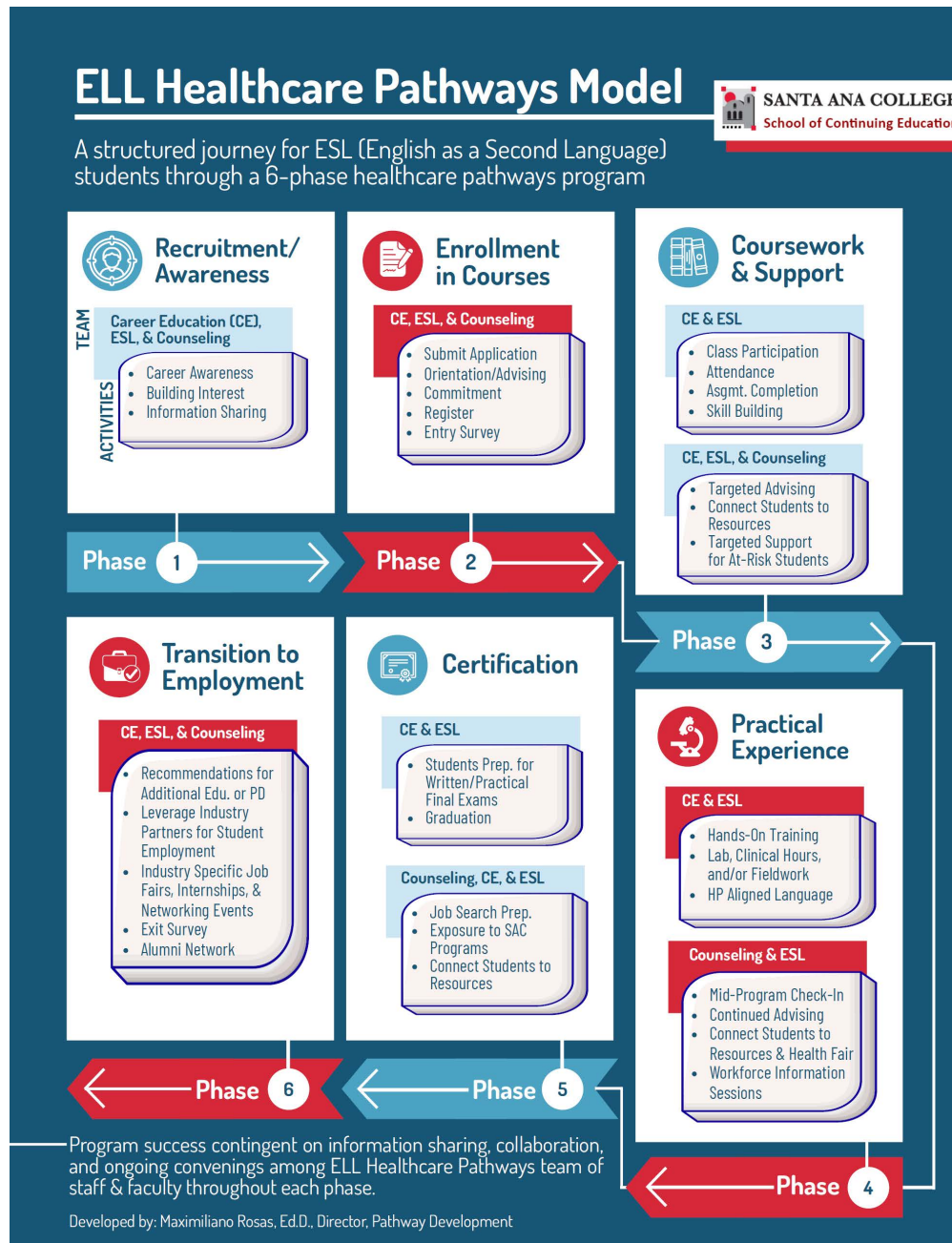
<https://calpro-online.org/integrated-education-and-training-iet>



References

- 113th Congress. 2014. Workforce Innovation and Opportunity Act. <https://www.congress.gov/113/statute/STATUTE-128/STATUTE-128-Pg1425.pdf>
- Bohn, Sarah. 2014. *California's Need for Skilled Workers*. Public Policy Institute of California. <https://www.ppic.org/publication/californias-need-for-skilled-workers/>
- California Department of Education. 2022. Workforce Innovation and Opportunity Act, Title II: Adult Education and Family Literacy Act (Public Law 113-128): Request for Applications—August 2022, Program Year 2023–27). Sacramento, CA: California Department of Education. <https://www.cde.ca.gov/fg/fo/r8/documents/wioa23rfa.docx>.
- Carver-Thomas, Desiree, Melanie Leung-Gagne, and Danielle Jeannite. 2024. *Tackling Teachers Shortages: What We Know About California's Teacher Workforce Investments*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/ca-teacher-shortages-workforce-report>
- Cates, Lindsay, and Stephanie Ferguson. 2024. *Understanding America's Labor Shortage: The Most Impacted States*. US Chamber of Commerce. <https://www.uschamber.com/workforce/the-states-suffering-most-from-the-labor-shortage>
- Emory, Doug, Linda Raymond, Karen Lee, and Sean Twohy. 2016. "The Academic I-BEST: A Model for Precollege Student Success in College Transfer Programs." *Journal of Research and Practice for Adult Literacy, Secondary, and Basic Education* 5 (3): 43–49. <https://eric.ed.gov/?id=EJ1125487>
- Grundy, Adam. 2023. *Manufacturing Faces Potential Labor Shortage Due to Skills Gap*. US Census Bureau. <https://www.census.gov/library/stories/2023/09/manufacturing-faces-labor-shortage.html>
- Hoeven, Emily. 2021. *Shortages, Worker Burnout Hit California*. CalMatters. <https://calmatters.org/newsletters/whatmatters/2021/10/california-economy-workers-supply/>
- Hoeven, Emily. 2022. *Where Did All the Workers Go?* CalMatters. <https://calmatters.org/newsletters/whatmatters/2022/01/california-unemployment-worker-shortage/>
- LINCS. n.d. *ADVANCE Integrated Education and Training (IET)*. <https://lincs.ed.gov/state-resources/federal-initiatives/advance-iet/>
- Mejia, Marisol Cuellar, Cesar Alesi Perez, and Hans Johnson. 2025. *Immigrants in California*. Public Policy Institute of California. <https://www.ppic.org/publication/immigrants-in-california/>
- Saclarides, Evthokia. 2023. "Coaches and Teachers Co-teaching: Exploring the Challenges and Support of Co-teaching as a Coaching Activity." *International Journal of Mentoring and Coaching in Education* 12 (3): 300–315. <https://doi.org/10.1108/IJMCE-11-2022-0100>
- The Literacy Cooperative. 2021. *Employers Advancing Literacy Is Key to Advancing Your Workplace*. <https://literacycooperative.org/wp-content/uploads/2021/09/Report-with-Executive-Summary-FINAL.pdf>
- Thompson, Bradley A., and D. Joseph Chapman. 2016. *Teacher Perspectives on Co-teaching in a Content Classroom With English Language Support*. Saint Paul, MN: Hamline University. http://digitalcommons.hamline.edu/cgi/viewcontent.cgi?article=5101&context=hse_all
- US Department of Education. 2015. Programs and Activities Authorized by the Adult Education and Family Literacy Act (Title II of the Workforce Innovation and Opportunity Act), Workforce Innovation and Opportunity Act, Miscellaneous Program Changes, and; Proposed Rules. Federal Register 80 (73): 20973. <https://www.govinfo.gov/content/pkg/FR-2015-04-16/pdf/2015-05540.pdf>
- US Department of Education, Office of Career, Technical, and Adult Education. 2021. *Adult Education and Family Literacy Act (AEFLA) Resource Guide*. <https://aefta.ed.gov/sites/default/files/2021-01/aefta-resource-guide.pdf>
- US Department of Education, Office of Career, Technical, and Adult Education. 2023. *Integrated Education and Training (IET) Design Toolkit*. Washington, DC: US Department of Education, Office of Career, Technical, and Adult Education. <https://lincs.ed.gov/sites/default/files/2023-01/IET-Toolkit.pdf>
- What Works Clearinghouse, Institute of Education Sciences, US Department of Education. 2020, September. *Integrated Basic Education Skills and Training (I-BEST)*. https://ies.ed.gov/ncee/WWC/Docs/InterventionReports/WWC_I-BEST_Brief_508.pdf

Appendix: Santa Ana College Student Centered Program Model



Author Credits

Sachiko Ozaki Oates (CALPRO/AIR)

Sudie Whalen (CALPRO/AIR)

Cory Rayala (CDE)

Margie Moriarty (WUAS)

Juan Anzaldo (WUAS)

Maximiliano (Max) Rosas (Santa Ana College)

Margo Sterling (CAJ)

Lana Fong (CAJ)

Sara Garcia-Salgado (Sweetwater)

Mariann Fedele-McLeod (CALPRO/AIR)