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Career Advancement Academies:

Insights into Contextualized Teaching and Learning

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About Equal Measure

Headquartered in Philadelphia, PA, Equal Measure provides evaluation and philanthropic services to social sector organizations. Our areas of focus include aligning systems for stronger outcomes, increasing access and opportunity, building human and social capital, strengthening community capacity, and elevating ideas for innovation. For 30 years, our clients have included major private, corporate, and community foundations, government agencies, and national and regional nonprofits. We have deep experience with initiatives that provide pathways for low- to moderate-income young adults to live better economic qualities of life, and have worked on an array of major national and regional programs for organizations such as the Citi Foundation, the Aspen Forum for Community Solutions, the James Irvine Foundation, the Lumina Foundation, the Strive Together Cradle to Career Network, and U.S. Department of Labor-funded grants in Wisconsin and the Northeast U.S.

Equal Measure has been the Career Advancement Academies' (CAAs) evaluation partner since 2012. Over the past four years, the Equal Measure evaluation has included a summative assessment of the CAAs' impact on students, and an investigation into the likelihood of, and factors contributing to, the sustainability of the CAAs.

About Career Ladders Project

The Career Ladders Project (CLP) is a non-profit organization that works with community colleges—and their K12, university, workforce, community, labor and employer partners—to build capacity and redesign education and workforce systems. Over the last 15 years CLP has worked with a number of innovative and large-scale initiatives to more effectively move underserved youth and adults to college and careers. As initiatives mature, CLP works with state and regional leadership, philanthropic partners and policy makers to promote expansion and replication of successful practices and to identify and implement systemic policy changes that can better support evidence-based approaches.

CLP conceptualized the Career Advancement Academy (CAA) framework and worked with the California Community College Chancellor's Office (CCCCO) to launch the statewide CAA initiative, designed to provide more structured educational experiences for students facing multiple barriers to post-secondary education. Early on, CLP forged a public/private partnership with the CCCCO and California philanthropic organizations—including the James Irvine Foundation, the William and Flora Hewlett Foundation, the Walter S. Johnson Foundation and the Bay Area Workforce Funding Collaborative—to support capacity building and coordination for the overall CAA initiative. CLP has played a critical role in coordinating and advancing the CAA initiative, supporting colleges to implement CAAs, building a statewide community of practice, documenting the work and working closely with the evaluators to improve the initiative over time.

Career Advancement Academies Introduction

Launched in 2007, the Career Advancement Academies are designed to enable underserved Californians – typically first in their families to attend college, low-income, or from communities of color – to enroll in higher education and adjust to emerging and evolving workforce and industry needs. Specifically, CAAs aim to increase the supply of middle skill workers by targeting under-prepared young adults (ages 18-30) whose low basic skills in reading, writing, and mathematics shut them out of post-secondary education and high-wage jobs. CAAs support students through a holistic set of interventions to build the foundational skills needed to complete postsecondary education and enter careers.

CAAs are intended as instigators of institutional change efforts. Rather than creating new infrastructures, CAAs seek to rework the system for delivering career education by integrating it into existing services. As such, the CAAs are not a "model" replicated uniformly across colleges, but rather a framework of common elements that provides each college the space for innovation in its interpretation and implementation (See "The Career Advancement Academy Framework").

The Career Advancement Academy Framework

Career Advancement Academies combine technical training and basic skills content into contextualized instruction, so that students acquire basic skills in a format relevant to their careers of interest. The CAA framework groups students in learning cohorts, provides them with intensive supports, and facilitates their career transitions. In combination, these elements build pipelines – or pathways – for students, leading from CAA programs to careers and/or continued higher education. The CAA framework includes five common elements:

- Industry-Responsive Technical Training. While often building on existing Career and Technical Education (CTE) courses, CAA programs ensure the relevance of students' technical training by adapting and developing course content in consultation with local employers. Success of CAA programs depends on their ability to respond to the labor needs of local industries. To keep current on industry trends, and ensure that students are trained in the requisite skills, CAAs build robust partnerships with local employers and Workforce Investment Boards (WIBs) to anticipate and respond to their needs. Employer partnerships also facilitate students' access to internships and, ultimately, job placements.
- Contextualized Teaching and Learning (CTL) in Basic Skills. CAA programs develop instructional approaches that contextualize basic reading and math skills with the technical courses in students' chosen fields. Contextualization can be accomplished in various ways. Some CAAs contextualize reading, writing and math courses with examples and problems from the career technical field, while others integrate contextualized math and English directly into technical courses. Combining foundational basic skills with technical training allows students to make immediate progress toward their goals, rather than waiting to complete a succession of traditional basic skills courses. It also helps students see and apply academic content that is immediately relevant to their career. These changes require CTE and academic faculty to work together to provide basic skills content in the context of career-relevant technical coursework.
- Student Cohorts. CAA students take all or most classes together as a cohort throughout the duration of the program. The cohort model allows students to form peer learning communities, helping each other learn the subject matter and supporting each other through school, life, and career events.
- "Transitions" Support. To prepare students for success in the workplace, CAAs offer "transitions" support, including career guidance, work readiness skills, job fairs, internships, and employer visits. Faculty and administrators in support services bridge silos in order to provide comprehensive services to CAA students.
- Intensive Student Support Services/Case Management. CAA programs help students manage personal issues that might interfere with their ability to succeed in the program by working closely with the college's counselors or referring students, as well as help students develop "soft skills" and college knowledge/success. Partnerships with community providers facilitate identification and recruitment of target CAA students, as well as provide social supports to students, complementing those available on campus. These supports help mitigate the external and life events that can affect student retention and completion.

Contextualized Basic Skills Teaching and Learning

Nationally, less than 40% of first time community college enrollees earn a credential or transfer to a four-year university within six years of enrollment. In California, the figure is 46%[1]. Approximately two-thirds of students attending community college are identified as unprepared for college-level academics, and are assigned to pre-college remedial (also known as developmental) courses. The majority of these students leave college before ever attempting a college-level course in English or mathematics[2]. One of the key CAA elements is contextualized teaching and learning of basic skills. Nationally, contextualization of basic skills is increasingly seen as a promising practice to accelerate students' progression through the basic skills sequence and support college completion (See "What is Contextualized Teaching and Learning and Why is it Important?"). The approach has also gained significant traction in California, including through the Basic Skills Student Outcomes and Transformation program, a $60 million state investment to reduce remediation through scaling evidence-based practices, especially acceleration, contextualization, and more accurate placement in the state's community colleges.

What is Contextualized Teaching and Learning and Why Is It Important?

Contextualization has been gathering attention as a possible path to education reform. Among reformers, there is some agreement that traditional teaching is often too removed from life and work. The lack of meaningful contexts makes it challenging for learners to activate their prior knowledge and make sense of new concepts and skills. When content is presented in an abstract manner, students often have difficulty relating it to course content, do not view it as relevant to their lives and goals, and struggle to maintain engagement. Even when students appear successful in traditional courses, they frequently have learned at a shallow level. Consequently, they struggle to apply the concepts and skills learned to future courses and/or employment. Contextualization can help overcome these challenges by creating a much more engaging experience for students, and providing relevant and meaningful contexts for learning activities within the context of an accelerated career pathway.

Contextualized teaching and learning is a group of instructional strategies designed to link the learning of basic skills (reading, writing, and mathematics) with academic or occupational content by focusing teaching and learning directly on concrete applications in a specific career context that is of interest to students. Contextualizing basic skills education to a particular career field, in conjunction with other key CAA program elements, can contribute to:

- Increased basic academic skills gains – accelerated student learning, improved critical thinking skills, and problem-solving;
- Improved engagement and motivation;
- Improved progression and success in subsequent coursework; and
- Improved persistence in college level work, completion of college credits and a credential.

Please see the Appendix for a sample list of sources.

CAAs have been implemented in colleges across several regions of California and have provided a rich testing ground for more structured and integrated approaches to support student entry into—and progression along—college and career pathways. Elements of the CAA framework have informed, and are becoming integrated into, major statewide college completion initiatives. Across regions, CAAs have seeded additional reform efforts, and have formed the basis for further work on a range of initiatives.[3] However, opportunities exist to deepen the influence *and application* of what we have learned about quality CAA implementation, including contextualized teaching and learning, into current college redesign efforts.

Driven by strong buy-in and enthusiasm of individual faculty, instructors, support service staff, and administrators, over the last several years colleges have designed, tested and continue to implement key CAA elements, including contextualized teaching and learning. Much progress has been made by faculty in developing contextualized instruction and integrating foundational skills with technical programs of study. Yet, as the colleges have moved to scale and institutionalize these efforts, it has become apparent that without deep institutional buy-in, and commitment to removing existing institutional barriers such as faculty supports, curricular alignment, or shifts in course scheduling, implementation of CAA elements and contextualization will continue to occur in a piecemeal fashion – on program by program, course by course, or grant-funded to grant-funded bases. *Until the CAA framework, including contextualized teaching and learning practices, are embedded in the very fabric of institutional priorities and functions, long-term sustainability will remain at risk.*

Without that leap by the college, CAAs will likely be viewed as stand-alone programs, and not as a way of working within the college – even though many of these elements (e.g., accelerated curricula, just in time supplemental instruction, contextualization, and experiential learning) are critical to the success of all students, not only those enrolled in particular career technical programs. Institutionalizing the CAA framework, and placing it at the center of college reform efforts, will require a number of structural changes ranging from departmental practices to curricular shifts. These practices and shifts include: allowing students to receive college credit for contextualized courses or recognition of competencies acquired through contextualized approaches, ensuring that courses and programs of study are "stackable" and connected into a seamless sequence, making certain that incentives and structures exist for collaboration between career technical education (CTE) and English and math faculty, and developing broadly contextualized courses for fields of study, rather than narrow programs or single courses.

Driven by a need to understand where these institutional barriers persist, and how colleges may overcome them, this Issue Brief focuses on understanding what it takes to implement contextualized teaching and learning well. Specifically, the Brief addresses four questions:

- What are the "ideal elements" for quality CTL implementation?
- What does the implementation of these "ideal elements" look like in select CAAs?
- What are the institutional and structural factors that impede implementation of CTL as a core component of CAAs?
- What are the implications of these factors for institutional change and sustainability efforts moving forward?

The Brief is based on a series of CAA administrator, faculty, and instructor interviews. A list of interviewees and their roles is included in the Appendix.

What Are the Ideal Elements for Quality CTL Implementation and Sustainability?

In Table 1, we present a working typology of "ideal elements" that interviewees have hypothesized as necessary to implement high quality contextualized teaching and learning. According to CAA and college administrators, faculty, and instructors, and supported by institutional reform literature, successful contextualized teaching and learning requires a combination of quality program design and implementation, as well as key institutional supports. These supports provide a foundation for *long-term sustainability and integration* of CTL and other key CAA elements into college functions.

Table 1.

Program Design	• **Contextualized Curriculum**. Basic skills instruction integrated and contextualized with technical coursework that is part of a clearly defined CTE focus and career pathway, and is based on relevant regional labor market data to meet the scale of demand. • **Aligned Pedagogy/Instructional Modality**. Quality problem-centered teaching strategies to support deeper learning: learning with understanding (knowledge); critical thinking and problem solving, collaboration, and effective communication (skills); and self-efficacy (academic mindset) – e.g., project-based, cross-discipline. • **Integrated Supplemental Instruction/Tutoring**. Group/collaborative, peer learning strategies, and/or individualized tutoring to help students master course content in order to stay on track and succeed. • **Contextualized and Integrated Student Supports**. Contextualized counseling and case management to support student progression and completion. • **Employer Partnerships**. Employers participate in program design – defining occupational and soft skills needed for future employees and providing feedback on the effectiveness of the curriculum.
Program Implementation	• **Curriculum Co-Development/Co-Delivery**. Contextualized curriculum development, including clearly defined, integrated student learning objectives, developed by cross-discipline faculty teams and business partners. Cross-discipline team teaching of basic and technical skills curricula. • **Targeted Student Recruitment and Screening**. Clearly identified target population(s) and intentional student recruitment and screening strategies to support alignment between student aspirations and program goals. • **Faculty Recruitment, Training, and Assignment**. High quality faculty recruitment and training in CTL theory and practice. Flexible faculty assignment to facilitate co-development/co-delivery. • **Structured Cross-Disciplinary Collaboration**. Time and place for CTL faculty and student services collaboration and learning (e.g., curriculum co-development, community of practice). • **Evaluation and Continuous Improvement**. Assessment processes for feedback and continuous improvement – assessment of student learning, quality pedagogy, student progression, credential attainment and employment, and institutional practices.
Institutional Supports for Scaling and Sustainability	• **Faculty Incentives**. Resources, professional development and institutional support for full-time and adjunct professors provide incentives to fully participate in CTL program design and implementation. • **Curricular Alignment and Credit**. Alignment of contextualized coursework with the competencies needed for success in students' programs of study as well as transfer/AA-level courses. Competencies gained via contextualized learning need to be formally recognized so that students can meet pre-requisites and proceed along college certificate and degree paths without having to repeat learning via the traditional developmental sequence. • **Course Scheduling**. Course scheduling to maximize student success (back-to-back, complementary, and supportive to their career pathway). • **Facilities**. Space/facilities for high quality instruction and learning. • **Alignment with Institutional Reform Priorities**. Leadership across all levels of the college is committed to leveraging institutional reform efforts to support and integrate CTL (e.g., moving to a meta-major, structured first-year experience, etc.).

What does the implementation of these "ideal elements" look like in select CAAs?

When it comes to contextualized teaching and learning in the CAA context, colleges are focusing *primarily* on quality program design, not on institutionalization. In most cases, colleges have made greater or lesser progress in different "ideal elements," depending on their own institutional priorities and strengths. However, some version of every CTL quality program design element, including curriculum, pedagogy, instruction, supplemental supports, and employer partnerships, is in place across all CAAs interviewed. This may be attributed to the fact that the quality program design elements are almost entirely within the purview of the CAA, and can be implemented with or without many of the institutional supports. For example, even where a CAA cannot bridge the divide between the CTE and academic faculty to co-develop and co-deliver curriculum, the CAA CTE instructors still provide quality contextualized curricula informed by a robust business partnership.

The examples below illustrate how select CAAs are operationalizing quality program design "ideal elements:"

Madera Center

Madera Center, a community campus of Reedley College, has a Maintenance Mechanic CAA that offers a one semester entry level certificate program in industrial maintenance, a follow-up, stackable certificate, and an AA degree in welding. The program is housed in its Center for Advanced Manufacturing, an 8,000 square foot facility exclusively for manufacturing programs.

Integrated Supplemental Instruction/Tutoring and Integrated Student Supports: Math and English instructors participated in co-designing the contextualized curricula for the basic courses of the program; more advanced classes in the certificate program are not contextualized. To help students struggling to keep up with the advanced courses because of difficulty with the math concepts, faculty and administrators developed an embedded math tutoring and supplemental instruction strategy within a cohort structure. Student supports include mandatory orientations and an individualized education plan for each student. In addition, Madera Center developed a career transfer center, with a counselor dedicated to helping students connect with employment and/or ongoing educational opportunities. Spillover effects of the CAA practices are emerging across the campus. For example, several departments, including math, English, and philosophy now use embedded tutors in their core courses.

Employer Partnerships: Madera Center has a strong relationship with the advanced manufacturing industry in its region. An advisory committee, actively engaged from the outset of the program's launch, has guided curriculum development, evaluated and made purchase recommendations, and donated equipment, visited classrooms and reviewed student work, and conducted mock interviews and provided externships. Madera also recognizes its business partners with the Business Supporter of the Year Award, which has become a prestigious honor among the region's industry.

Program Design "Ideal Elements"

- Contextualized Curriculum
- Aligned Pedagogy/Instructional Modality
- Integrated Supplemental Instruction Tutoring
- Contextualized and Integrated Student Supports
- Employer Partnerships

El Camino College

El Camino College's Welding CAA is a semester-long program broken into eight-week blocks. The CAA certificate in welding is stackable with other certificates (e.g., aerospace, structural welding) and AA degrees in the Industry and Technology divisions of the college (e.g., AA in Welding Technologies).

Contextualized Curriculum and Aligned Pedagogy: Math instruction, a particularly strong program component, is contextualized, with content and instructional approaches developed through a close collaboration between the math and welding instructors. In this case, the math faculty teaches a basic math workshop contextualized with welding examples. Because the math instructor uses a project-based approach, the course is centered on a welding project where students can apply the basic math concepts they are learning in the course. In addition, the welding classes are taught in such a way as to build students' English and communications skills.

Employer Partnerships: The Welding AA has deep bonds with local manufacturers, including the burgeoning aeronautic manufacturing industry. They have an industry advisory group to keep the curricula current and the certification programs aligned with their workforce needs.

Skyline College

At Skyline College, CAA programs are serving as a "front door" to the community college for a population that experiences barriers that prevent them from succeeding in college. The CAAs are designed to remove these barriers and connect them to a career pathway, which the college has structured around stackable certificates that are aligned to AA degrees and/or transfer if students want to continue with their formal education. As a result, Skyline College has extended CAAs across a wide range of entry level programs in career pathways, with CAAs in allied health, automotive technology, early childhood education, legal, and domestic warehousing and logistics. In each, students take a one-semester program that bridges to multiple pathways in that field. Skyline College's CAAs are cohort-based, and structured as learning communities with a focus on specific industries. Importantly for continued learning and career advancement, the college has an accelerated math approach, so that students completing a CAA begin college-level math courses, supported by the CAA learning community and supplemental instruction where needed.

All CAAs at Skyline College have contextualized English courses (the Automotive and Allied Health CAAs also include contextualized math) with aligned experiential pedagogical approaches, embedded tutors roaming in the classes, robust employer and community partnerships, and, starting with the allied health CAA, a contextualized soft skills course prepared by a dedicated CAA counselor. This counselor also provides individual support as needed, supplemented by significant student supports provided by an on-site community based program called SparkPoint. The main goal of the contextualization of basic skills is to maintain student momentum. Faculty and student support staff work within a structured bi-weekly community of practice to co-develop curriculum, conduct integrated case management, receive training and professional development, and provide peer support and problem solving.

Across interviewees, evidence of implementation and institutional support "ideal elements" is limited, with the exception of providing facilities for quality instruction and learning. While there is enormous buy-in and enthusiasm of CAA directors, faculty, instructors, and support services staff for high quality CTL program design, structures to support quality implementation and institutional incentives have been more difficult to garner. As a result, CAAs and contextualized teaching and learning continue to be largely viewed by college leaders and faculty as stand-alone programs or practices, rather than a reform strategy that leads to departmental or institutional shifts. Evidence from interviews suggests that when the goals of the CAAs or contextualization are recognized as in sync with institutional priorities, then the presence of implementation or institutional support "ideal elements" is more likely, and the practices are more likely to be embedded into institutional functions. For example, where incentives encourage math and English faculty to participate in CTL within the CAA context, as in the case of Skyline College's bi-weekly community of practice, the CAAs have more systematic curriculum co-development/co-teaching, and structured cross-disciplinary collaboration.

While elements of quality implementation are not universally evident, select CAAs provide important insights into how some of the program implementation "ideal elements" are taking shape. The descriptions below highlight some promising implementation approaches in CAA colleges.

Los Medanos College

The Process Technology (PTEC) CAA at Los Medanos College was developed in response to regional industry needs. It is a three semester, 35 unit certificate program which prepares students for jobs with salaries up to nearly $45/hour. Los Medanos also grants an AA degree in PTEC. As key industries employing process technicians have modernized – e.g., oil refineries, and pharmaceutical and chemical plants – jobs in the field require both familiarity with chemical engineering concepts and critical thinking skills, to become in essence "para-engineers." As a result, the PTEC CAA has refined its curricula to include chemistry and physics. Realizing these classes pose serious barriers to the PTEC students, Los Medanos PTEC and Electrical & Instrument Technology (ETEC) programs are developing a contextualized physics course.

Curriculum Co-Development/Co-Delivery: Informed by and in consultation with industry partners, physics faculty and CTE faculty have co-developed a (credit-bearing) physics course contextualized with PTEC and ETEC concepts, with an emphasis on developing critical thinking skills. The PTEC instructor and physics faculty identified common learning objectives, and they meet bi-weekly to discuss specific problems relevant in the PTEC program and to figure out ways to embed them within the curriculum, including co-developing presentation materials. The physics professor teaches the CTL physics course, employing experiential activity-based pedagogies and lab work, much of which takes place in groups. In addition, the basic math and chemistry courses in the program are contextualized. However, the CTE instructor develops and teaches this curriculum, as difficulties with getting buy-in from the relevant academic departments within the college persist.

Skyline, Madera, and Laney Colleges

In general, CAA programs have experienced challenges in defining their target populations, and conducting effective outreach and recruitment strategies. Because community college programs are open access, reaching students with certain characteristics requires targeted recruitment.

Targeted Student Recruitment and Screening: Skyline, Madera, and Laney colleges have developed screening processes to identify students who are interested and motivated to participate in CAAs. In addition, these colleges designed substantial student on-boarding processes to ensure that students are clear about CAA expectations and requirements for certificate completion in advance of enrollment. Madera Center has well-established partnerships with Adult Probation and the Workforce Development Office to help with student recruitment, screening, and on-boarding, to ensure expectations between the student and the CAA are aligned.

Program Implementation "Ideal Elements"

- Curriculum Co-Development/Co-Delivery
- Targeted Student Recruitment and Screening
- Faculty Recruitment, Training, and Assignment
- Structured Cross-Disciplinary Collaboration
- Evaluation and Continuous Improvement

Skyline College

Skyline College's president provides the vision, leadership, and tangible support for the CAAs. She has championed the CAA approach, and has prioritized the institutionalization of high impact CAA practices within the fabric of Skyline College's efforts to restructure itself around student success for all students. Central to operationalizing this vision has been the intentional blurring of the line between CTE and academic programs, and the huge commitment to tackling the difficult structural shifts needed to achieve curricular alignment, supportive course scheduling, and priority registration.

CTE programs are part of divisions composed of both CTE and traditional academic programs of study. With this level of institutional support, most of the framework's implementation processes are present in the college's CAAs. Of particular importance are the implementation processes that are uniquely in place at Skyline College, including: systematic faculty recruiting, training, and assignment; structured cross-disciplinary collaboration and evaluation; and continuous improvement.

Faculty recruitment is a collaborative effort that involves support services staff, faculty from multiple departments, Skyline College's outreach department, and high school and adult school partners. Faculty join CAAs in one of three ways: (1) Deans select them (and deans with strong understanding of the CAAs typically are more successful in selecting faculty); (2) CAA faculty recruit them; or (3) they opt in. Student recruitment strategies include visiting local high schools and adult schools, and inviting students from these schools to Skyline College for CTE career days, campus tours, and special events.

The CAA cross-disciplinary faculty/staff community of practice is the collaborative space where professional development and collaborative planning regularly take place. It also provides an ongoing platform for curriculum co-development, training, and shared learning, and for making program refinements when necessary. The teamwork and communication extends to the leadership level: deans across the college meet to plan learning community class schedules, discuss faculty placement and hiring, and provide student support.

In the Skyline College CAA approach, data are systematically collected and used by CAA stakeholders to provide feedback to ensure continuous improvement. Student learning data are analyzed in order to provide faculty with training and assistance to improve their teaching approach. Student persistence and achievement data are tracked with local and regional labor market data, and regular employer updates, to make overall refinements to CAA programming. These data also are used to provide feedback and suggestions to the college about removing possible institutional and organizational barriers to student success efforts.

What are the institutional and structural factors that impede implementation of CTL?

Despite progress in putting sound program design into practice, and emerging examples of quality implementation and institutional support, high-level institutional buy-in and corresponding large-scale reform and institutional alignment have been difficult to enact. As a result, it has been difficult for colleges to fully implement the "ideal elements" for contextualized teaching and learning, and to fully institutionalize elements of the CAAs.

The most difficult barriers to quality CTL implementation include: 1) the lack of high-level institutional leadership to bridge together the academic and technical sides of the college, and 2) realigning faculty incentives and supports around student success. Both of these challenges are within the purview of the colleges themselves, and implicit in many higher education reforms coming from the state. In the summative evaluation of CAAs, we indicated that the most noted factor in successful contextualization is the degree to which CAAs bring instructors together from academic and technical sides of the college to work together on a regular basis. However, this practice is occurring on a program by program, or course by course approach, and is not yet occurring systemically at most of the CAA colleges. The chasm between the academic and technical sides of the college persists, and current incentives for academic faculty (institutional supports, recognition, and rewards) do not support participation in CAAs, or in contextualizing basic skills learning with a technical subject. Specifically, there continues to be difficulty in recruiting math and English instructors from the academic side to co-develop/co-teach contextualized curricula in the CAAs, as well as sustain participation in systematic cross-disciplinary collaboration.

As a result, many CAAs are training and deploying technical instructors to develop contextualized basic skills curricula as a work-around to address pressing student needs. It is noteworthy that CAA interviewees indicated it was much easier to forge successful partnerships with the business community than the academic side of their colleges.

Persistent institutional barriers that plague other student success reform efforts also prevent colleges from implementing CTL "ideal elements" with fidelity. Lack of curricular alignment within and between community colleges, and with transfer systems, is reflected within the CAAs. As a result, there has been difficulty in aligning CAA student pathways with traditional developmental sequences and in enabling students to "count" competencies achieved via contextualized learning toward (or in lieu of) English and math pre-requisites as well as certificate and AA/transfer requirements to create accelerated, stackable credentials with no wasted credits. While CAA stakeholders attempt to create alignment, there are few examples of courses that provide both basic skills and CTE credit, or of colleges that currently have mechanisms to formally recognize English or math competencies achieved via alternate, contextualized coursework. Likewise, course scheduling to accelerate and maximize support for student success continues to be a challenge, impeding students from effectively and efficiently reaching their educational and career goals. Even though the evidence is clear that traditional developmental education strategies impede student success and that accelerated curricula support persistence and completion, traditional developmental course sequences continue to exist in most colleges as the only recognized means by which students can address literacy and quantitative reasoning requirements. Until the developmental education barrier is addressed college-wide, it will continue to make systematic progress on implementing CTL "ideal elements" difficult.

When CAA and CTL elements are not institutional priorities, the long-term sustainability of the CAAs are at risk. Some interviewees voiced concern that CAA components were not being integrated into the fabric of their institutions, or placed at the center of college-wide student success and policy reforms, even though many of the elements (e.g., accelerated academic catch-up, just-in-time supplemental instruction, contextualized curricula, and experiential learning/pedagogy) are critical to the success of all their students, regardless of program of study. This poses significant risk for long-term sustainability of core elements of the CAA approach, and the CAA's institutional change goals.

What are the implications of these factors for institutional change and sustainability efforts moving forward?

Given the impact CAAs have had on student academic and certificate attainment, and on the current higher education policy climate, there is a strong impetus for colleges throughout California to institutionalize the CAA initiative. CAAs have begun to spark institutional change, and have been experimenting with promising practices for embedding elements of the framework beyond the confines of the grant-funded "CAA Program."

Nonetheless, the institutional and structural barriers to fully implementing CTL in CAA colleges put long-term sustainability at risk, and impede progress on realizing success for ALL students. Where there has been progress on "ideal" implementation and institutional supports – e.g., faculty incentives, curricular alignment/stackability, and course scheduling/impaction – efforts to embed contextualized teaching and learning into college-wide success efforts have been more effective.

This deeper review of the implementation of contextualized teaching and learning within select CAAs offers important insights for colleges that seek to reorganize around student success. A good starting point for interested stakeholders is to examine the presence or absence of the "ideal factors" for implementing CTL, with a concerted focus on moving beyond sound program design to investigating the implementation and institutional factors that can help support the scaling and sustainability of CTL "done well".

Factors Influencing Institutionalization and Sustainability

Based on the experiences of the CAA colleges, there are three levels of factors that influence institutionalization: program-, institution-, and community-level factors.

- Program-Level Factors: CAA programming must be high quality; relevant to the institution, its students, and employers; and have a strong infrastructure to support continued implementation. This infrastructure includes existence and use of evidence of CAA success to fuel planning for extension, scaling, or internal replication; dedicated leadership and staff capacity; and faculty and instructor recruitment, retention, professional development, and incentives – including dedicated paid planning time and cross-faculty/instructor supports.
- Institution-Level Factors: Beyond program strength, there are several factors that position the CAA as a "good fit" within the institutional culture and vision: high-level leadership support and multiple champions across many levels within the institution; clear institutional and CAA mission alignment; embedded accountability mechanisms that ensure that the CAA is connected to institutional performance measures and processes for continuous improvement; infrastructure and policies that support cross-departmental exchange and ongoing communications; and institutional incentives and budget allocations specific to the CAA.
- Community-Level Factors: External support and validation for a CAA have positive implications for sustainability (e.g., multi-level institutional connections to employers and community partners). CAAs are more likely to continue if and when they are linked to the community and a broader set of stakeholders who can advocate for program continuity and institutionalization. Both of these factors are dependent upon the CAA's ability to clearly document and illustrate community demand.

Appendix: Interviewees and Sources

Interviewees

REGION	CAA DIRECTOR	CAA	CTE PATHWAY	INTERVIEWEE	ROLE
East Bay *Alameda County*	Eva Denise Jennings	Laney	Industrial Maintenance	Beth Maher	CAA Site Coordinator/CTL English instructor
				Kathi Roisen	CAA Adjunct Faculty
Contra Costa		Los Medanos	Advanced Manufacturing/ Process Technology (PTEC)	David Wahl	Workforce Development Manager/CAA Coordinator
				Toni Stone	Physics Instructor (academic)
				William Cruz	PTEC Department Chair, Math, Chemistry Instructor
South Bay *San Mateo County*	Alina Varona	Skyline	Allied Health	Alina Varona	CAA Director
				Davis Hasson	CAA Math Instructor
				Paul Rueckhaus	Allied Health Instructor
				Lorraine DeMello	CAA Counseling
Central Valley	Brian Boomer	Reedley College/ Madera Center	Advanced Manufacturing/ (Maintenance Mechanics)	Jim Chin	Dean of Instruction, Madera & Oakhurst Campuses
Southern CA *LA County*	Naomi Castro	El Camino	Aerospace (Welding)	Renee Newell	Welding Instructor
				Laura Hinckley	Math Instructor (academic)
Career Ladders Project			CAA Technical Assistance team	Mina Dadgar	Director of Research
				Kris Palmer	Senior Director
				Peter Simon	Senior Consultant

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Endnotes:

[1] National Student Clearinghouse, Shapiro & Dundar, 2014; California Community College Score Card (hyper link to http://scorecard.cccco.edu/scorecardrates.aspx?CollegeID=000#home)

[2] Bailey, Jeong, and Cho. (2010). http://ccrc.tc.columbia.edu/publications/referral-enrollment-completion-developmental-education.html

[3] Including the Basic Skills Initiative; the Basic Skills Student Outcomes and Transformation Program; the CCC Linked Learning Initiative; the Career Technical Education Pathways Program; the California Community College Student Success Initiative; the California Career Pathways Trust; and several federally funded Trade Adjustment Assistance Community College and Career Training Program grants awarded in California, among others.


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