

Since its inception at Cabrillo College in 2002, and after its expansion to a number of colleges nationwide, the Academy for College Excellence (ACE) – formerly called Digital Bridge Academy (DBA) – has been rigorously evaluated qualitatively and quantitatively. Ten independent external evaluations have been conducted, all demonstrating significant impacts on underprepared students, as well as students in professional Career Technical Education programs, and community college faculty. The ACE Program is scalable and sustainable because it is delivered through curriculum in the classroom.

INTRO

This document summarizes the findings and outcomes of longitudinal evaluation studies of the ACE Program. The key findings:

1. The ACE academic outcomes are replicable at colleges adopting the ACE model; i.e., the academic outcomes produced in the 2009 Columbia University’s Community College Research Center (CCRC) study are replicated when the ACE Program is implemented at multiple colleges where some of the colleges are scaling to serve over 350 students per year, and over 40,000 students online.
2. The ACE accelerated math approach shows strong results when integrated with the ACE social justice primary research course, and the accelerated math approach is successful when combined with accelerated English in the same semester; combined, these show a positive longitudinal impact on 6-year outcomes.
3. For professional CTE students, ACE 21st century skills showed a significant increase of salary outcomes for three cohorts of nursing students, outpacing their colleagues who did not attend ACE.

The most successful college students acquire the social and emotional skills needed to develop resilience and persistence when they encounter challenges. Yet many higher education institutions deprioritize these key skills, assuming students already possess them or that scaling this type of instruction will prove ineffective.

The results from the longitudinal studies discussed in this brief show that the ACE model has very positive effects on those students who participate, contribut-

ing significantly to their persistence and achievement rates in the longer term. They also show the results are sustainable and scalable. For some groups, the long-term impact on wages is significant. Improvement is not limited to students, but also the professional development of community college faculty.

STUDIES

2009 THE CCRC STUDY

N=66 / 4-SEMESTER OUTCOMES

Funded by the James Irvine Foundation, and the William and Flora Hewlett Foundation, this study, published in 2009, evaluated nine cohorts of students enrolled in the ACE program at Cabrillo College between Fall 2003 and Fall 2007, and was followed longitudinally for four semesters.

2014 RTI STUDY

N=1,020 / 1-YEAR OUTCOMES

This study was funded by the Bill and Melinda Gates Foundation, and analyzes the achievement of multiple cohorts of ACE students at 4 colleges—Berkeley City College, Cabrillo College, Hartnell College, and Los Medanos College—from Fall 2010 to Spring 2013, using comparison groups constructed from institutional and program data.

2018 RP GROUP STUDY

N=2,746 / 6-YEAR OUTCOMES

This study, funded by the Joyce Foundation and conducted by the Research and Planning Group for California Community Colleges, assessed the long-term academic and salary impact of ACE on students who had participated in the program between Fall 2003 and Spring 2014 at three California Community Colleges: Berkeley City, Cabrillo, and Hartnell Colleges.

WHY STUDY ACE?

Founded in 2002, ACE serves at-risk and underrepresented student populations – those who often experience multiple risk factors like abuse, homelessness, and gang association. Through interactive courses, ACE develops psychological skills that are often de-prioritized in favor of cognitive skills and factual knowledge. These courses concentrate on creating an environment where students learn empowering strategies to control their own fates. ACE also serves prepared students in professional career technical education programs like nursing, radiologic technology, and construction management

STUDY FINDINGS

The findings from these studies show that after experiencing the ACE program, students had increased retention and persistence, higher rates of course completion (notably of crucial courses), higher velocity completing a program, as well as incorporating skills that support learning.

Below we the findings from the following studies:

- 2009 Columbia University’s Community College Research Center (CCRC)
- 2014 RTI International Evaluation Studies
- 2018 RP Group Study

2009 COLUMBIA UNIVERSITY COMMUNITY COLLEGE RESEARCH CENTER (CCRC)

The CCRC study showed (see Figure 1) that students in the accelerated ACE program, one semester after the intervention, are:

- 145% more likely than their peers to pass associate-level English courses
- 84% more likely than their peers to pass transfer-level English courses
- Earn an average of 21 more credits than their peers
- 97% more likely than their peers to enroll full time in following semester

2009 Columbia University CCRC		
	Assessment Cohort	Accelerated ACE
N	11,578	66
Mean Age	21	23
Latino	32%	83%
Female	50%	53%
Prior College Credits	18	11
No HS Diploma	12%	15%
Low Income Zip	27%	85%
ESL Student	4%	8%

Data from Cabrillo College’s student information system and multivariate analysis was used to compare attainment by ACE students with that of a comparison group of more than 11,500 students at Cabrillo College who did not participate in ACE.

Further, Dr. Davis Jenkins, principal investigator of this study, noted:

“ACE students are very likely to be more at-risk than Cabrillo students with similar levels of academic preparation... To the extent that the ACE students in the sample were substantially more disadvantaged than other students, it may be that the estimates produced throughout this analysis understate the effect of participating in ACE.”

Columbia University Community College Research Center Summary of Outcomes

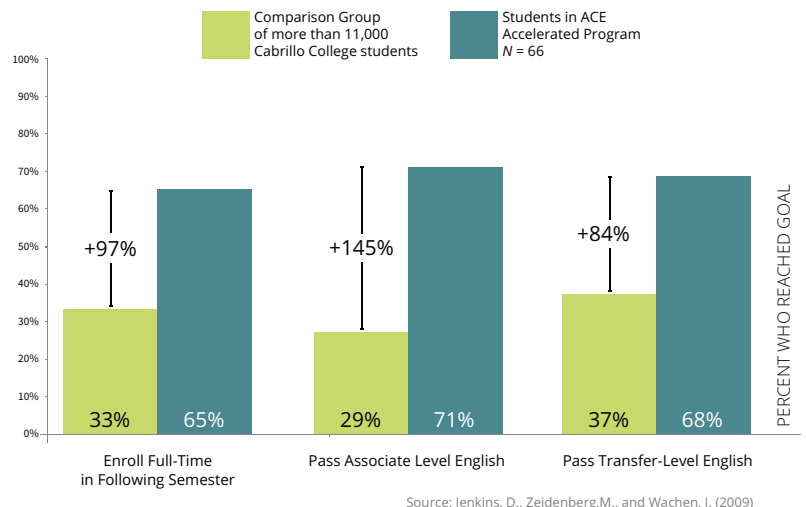


Figure 1 CCRC Summary of Outcomes

JANUARY 2014 RTI INTERNATIONAL EVALUATION STUDIES

The RTI Report of 1,020 ACE Students at six colleges shows that ACE students experience a high velocity of advancement through transfer-level English and transfer-level Math, as well as shifts in affective factors that contribute to future academic success.

2014 RTI International	
ACE	
N	1,020
Mean Age	24
Underrepresented Groups	79.9%
Female	43.9%
Prior College Credits	2.4
GED or HS Dropout	25.9%
Placed 2+ levels below College English	48.4%
Placed 1 level below College English	42%
Assessed 2 or more levels below College Math Los Medanos College only	88.9%

The comparison group was created using regression analysis, and was chosen through propensity score matching. The total sample size for the regression is 139,865.

For tentatively connected students, completing developmental or remedial courses is one of their most difficult obstacles and the first critical step in completing college. Among the findings of the RTI evaluation study released in January 2014 is that ACE students are 2.3 times more likely to complete transfer level English (see Figure 2) one semester after attending the ACE accelerated program than comparable non-ACE students.

In this pilot, ACE math acceleration students were 4.3 times more likely to pass transfer-level math one semester after attending ACE (see Figure 3). ACE acceleration students were 7.8 times more likely to pass transfer-level English and Math courses one semester after attending ACE (see Figure 4), compared to non-ACE students. One ACE Math program offers pre-statistics integrated with the ACE Social Justice Primary Research Course during the ACE bridge semester.

Four College Longitudinal Study of 1,020 Students Transfer-Level English Completion

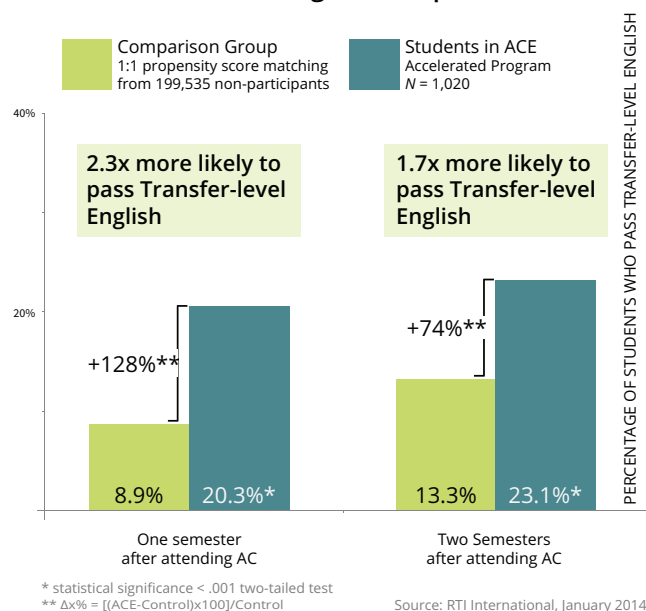


Figure 2 Transfer-Level English Completion

2014 ACE Longitudinal Study — Los Medanos College Transfer-Level Math Completion

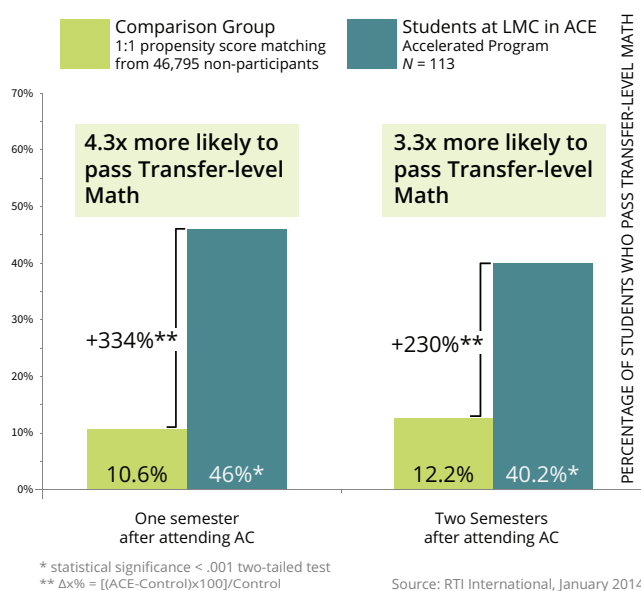


Figure 3 Transfer-Level Math Completion

Overall, the results studying 113 students suggest that this pilot program combining both English and Math acceleration in the same semester to the same students leads to greater completion of both transfer-level English and math following the ACE semester.

2014 ACE Longitudinal Study — Los Medanos College Transfer-Level Math & English Completion

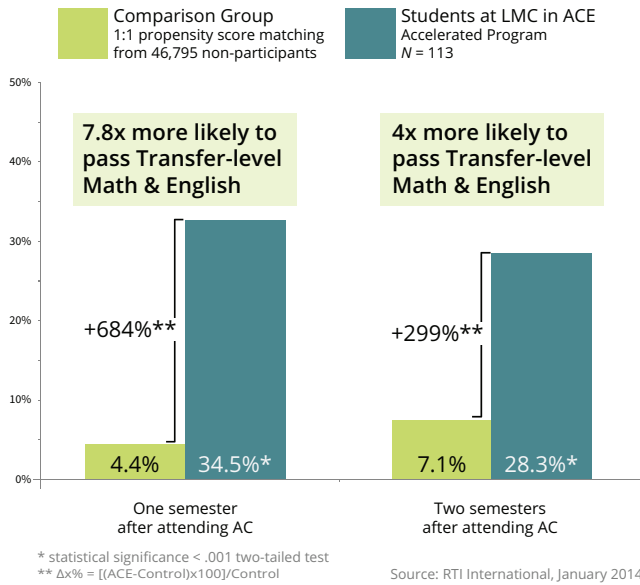
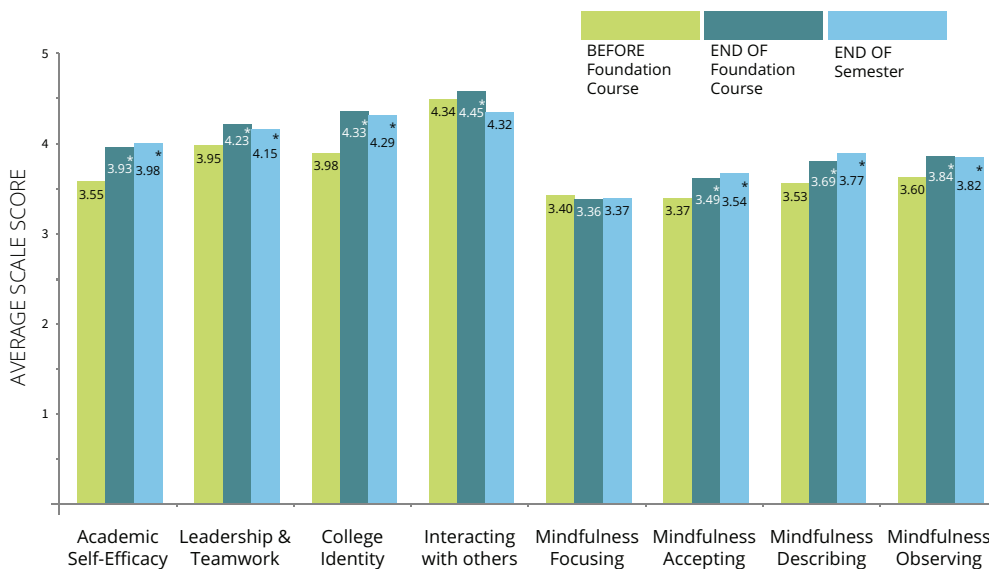


Figure 4 Transfer-Level Math & English Completion

RTI measured credit accrual, retention, persistence, full-time enrollment, successful completion of transfer-level Math and transfer-level English for students at one college, and successful completion of crucial gatekeeper English courses, not only for all ACE students, but also from a larger group of students used to construct comparison groups.

Data collected from the colleges includes transcript

Six College Study of 769 Students ACE's Non-Cognitive Effect on Students



*p<.001; statistical significance is based on comparison with Time 1 scores.

Figure 5 ACE's Non-Cognitive Effect on Students

information (e.g., courses and grades), assessment/ placement test results for English, Math, Reading, and/or ESL, and demographic information (i.e., date of birth, gender, ethnicity).

Affective, Non-cognitive Research

ACE, RTI, and Professor Martin Chemers—Professor Emeritus of psychology from the University of California Santa Cruz, developed an instrument that combines eight mediating factors from standardized instruments including academic self-efficacy, personal responsibility, college identity, four factors of mindfulness, and leadership and teamwork efficacy.

ACE named this instrument the College Student Self Assessment Survey (CSSAS). ACE students who completed the ACE Foundation Course and Bridge Semester exhibited significant gains in the eight factors measured: *academic self-efficacy, personal responsibility, college identity, four factors of mindfulness, and leadership and teamwork efficacy* (see Figure 5). In fact, students improved in seven of the eight factors at a p<.001 level of significance after the 2-week Foundation of Leadership Course (FC). With the exception of two factors, the change remains consistent or improved four months later (at the end of the semester).

2018 RP GROUP STUDY

In the RP Group study, students who have an opportunity to nurture these supportive skills are more likely to meet challenges with more resilience, focus, and use effective communication.

Skill 1 Purpose and Direction

Taking responsibility, developing agency, setting priorities, making decisions, and taking action to ensure personal success

Skill 2 Self-awareness and Self-discipline

Foster emotional self-regulation and encourage students to trust others, responses to stress

Skill 3 Communication with Others Listening to others, managing stressful conversations, and developing thoughtful, calm responses

Skill 4 Understanding Working Styles Understanding working styles, identifying others' styles, using these styles in relationships and teams.

OUTCOMES

This group of independent studies ranged over the course of years, published between 2009-2018. The CCRC study was relatively limited to confirm the efficacy of the ACE program's content; the RTI study found the content was still effective after scaling for a larger audience; the RP Group study found the longer-term effects were significantly improved academically and professionally.

ACADEMIC OUTCOMES

In the RP Group six-year longitudinal study most ACE participants completed college-level English in the same semester as ACE, a key requirement for associates degrees and for enrolling in transfer-level English, despite placing into remedial English. This English completion rate is more than double the rate of a comparable group of non participants. ACE participants also earned more than twice as many college-level credits on average as non-participants in ACE, another early momentum point associated with completion and transfer. ACE participants were more likely than non-participants to enroll full time in the semester following the ACE semester, enabling them to earn credits more rapidly.

The academic outcomes analyzed in the RTI study show similar results to the outcomes published in the Columbia University Community College Research Center (CCRC) study of the ACE program, which analyzed the ACE implementation at Cabrillo College when it only served 25 students per semester. The RTI study has shown evidence that the ACE model, curriculum, faculty development, and train-the-trainer approach can reproduce similar academic outcomes at multiple colleges, some of which are serving between 250 and 350 students per year.

Velocity

Tentatively connected students enrolled in ACE also make significant gains after they leave the ACE program, compared to non-ACE students.

From the RTI study, ACE students have the advantage of completing transfer-level English sooner than the control group, and this advantage enables them to take other more advanced courses that require transfer-level English as a prerequisite sooner than would otherwise be possible.

While some findings may initially seem modest, given the substantial array of risk factors faced by ACE students, it is remarkable that over the long-term, their academic achievements equaled or came close to matching those of other students whose educational pathway was fraught with many fewer obstacles and challenges.

Persistence

As shown in the RP Group Study, nursing students who participated in the program showed increased persistence and completed their degrees at a higher rate. This six-year longitudinal outcomes study compared participants academic outcomes to a matched control group, the evaluation showed that they were:

- 2.1 times more likely than control group students to earn an award within six years;
- 2.4 times more likely to complete a transfer-level English course within three years;
- 2.0 times more likely to complete a transfer-level math course within three years; and
- 2.7 times more likely to earn 30 units within three years.

As well, nursing students in the program completed their degrees at a higher rate.

Comparison of Award Attainment Nursing students: Pre-ACE and ACE			
	Pre-ACE n=236	ACE (n=499)	Difference
Timeframe	Percentage of Students	Percentage of Students	Percentage Difference
Within 3 years	27.7%	64.3%	36.6%
Within 6 years	43.4%	67.6%	24.2%

RP GROUP STUDY OF PROFESSIONAL AND SALARY OUTCOMES

In addition to looking at academic outcomes, the RP Group study analyzed six-year professional and salary outcomes. In their analysis their findings included the effects of ACE on student equity populations as well as students in career technical programs.

Both males of color and underrepresented minority students in general who participated in ACE started to catch up to the control group's earnings levels by the sixth year. In fact, underrepresented minority ACE students eventually exceeded the annual median wages of the control group by almost \$1,000.

In the study of nursing students salaries the researchers found that six years after the nursing students took the ACE 21st Centuries Skills course they had a median salary of \$84,077. The nursing students who did not have the course had a median salary of \$44,853. This is almost a \$40,000 median salary difference after six years (see Figure 6).

Exploring how ACE participants' earnings changed over time for each ACE meta-level, the data revealed that ACE participants saw significantly more growth in their earnings over a six-year period than did their peers from the control group, regardless of ACE program variation. Students in the control group had a wage gain of 107% from pre-ACE comparison term to six years post-ACE comparison term; ACE students,

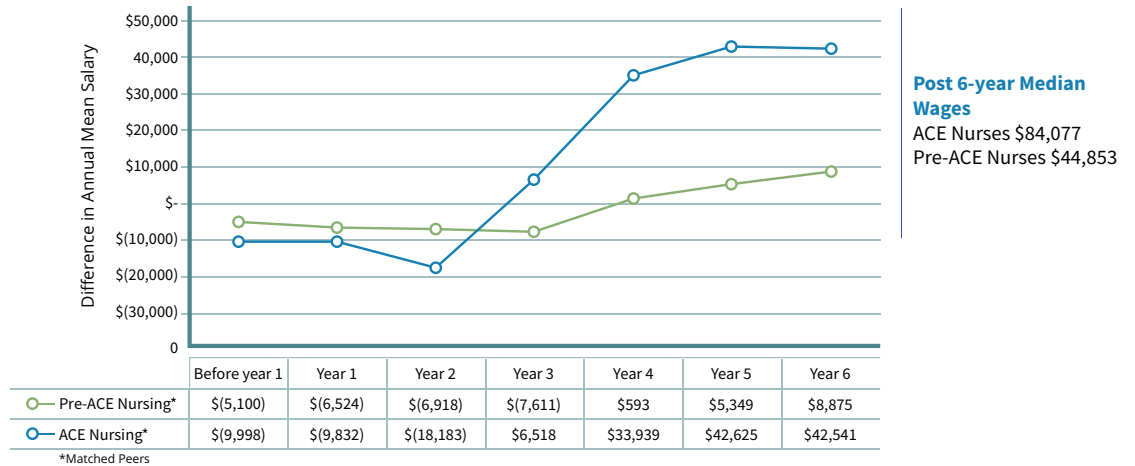


Figure 6 Difference in Annual Mean Salary comparing ACE Nursing students and Pre-ACE Nursing students

regardless of program variation, had wage gains that ranged from 163% (Un-accelerated English) to 451% (non-CTE Foundation only) (see Figure 7).

Notably, long-term data from the nursing segment showed a significant improvement in wage rates compared to their matched peers. ■

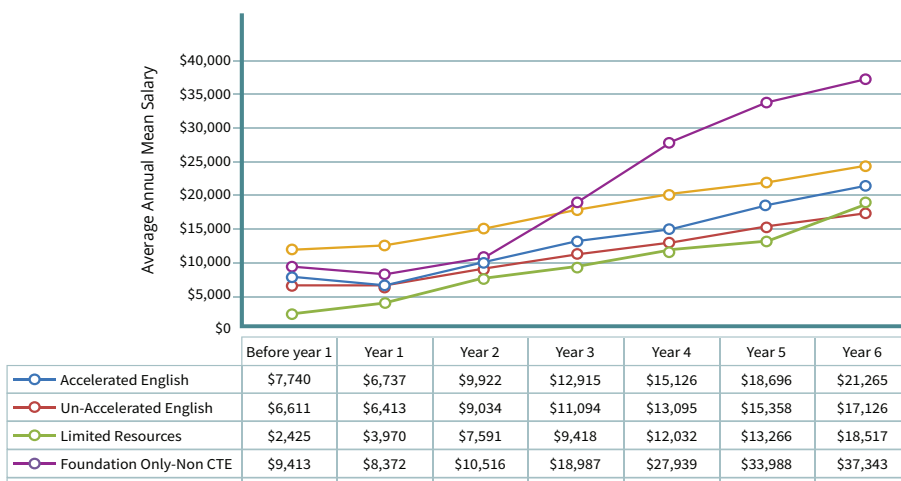


Figure 7 Average Annual Salary for select populations



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