

[Pre-publication copy of chapter from forthcoming college completion edition of *New Directions in Community Colleges*, edited by Katherine Hughes and Andrea Venezia (Jossey-Bass, 2014)]

The authors describe how they are using data and professional learning to mobilize change in developmental English and math curriculum and pedagogy across multiple community colleges in California.

Chapter 3: California Acceleration Project: Redesigning Developmental Education to Increase Student Completion of College-Level Math and English

By Katie Hern, with Myra Snell

Nationwide, most community college students are placed into remediation and required to take one or more semesters of non-credit-bearing coursework in reading, writing, and/or mathematics. And though these courses were intended to prepare students for success at the college level, large research studies have shown that the majority of students placed into remediation do not go on to complete college-level requirements in English and math. Indeed, the lower down students start, the lower their completion rates (Bailey, Jeong, & Cho, 2009). In California, just 19% of community college students who begin three or more levels below college-level coursework in writing go on to complete a college-level English course in three years. The figure is a dismal 6% for students who begin three or more levels below college math (Basic Skills Cohort Tracker, Fall 2009-Spring 2012). Students of color are particularly impacted in the current system, because they are disproportionately placed into the lowest levels of remediation. In math,

for example, more than half of all Black and Latino community college students in California are placed three or more levels below college (Perry, Bahr, Rosin, & Woodward, 2010).

As leaders of the California Acceleration Project (CAP), we are working to address this problem by supporting community colleges to redesign their remedial curricula. In partnership with the statewide community college professional development organization 3CSN, funded through grants from the state Chancellor's Office, the Walter S. Johnson Foundation, and LearningWorks, we offer workshops demonstrating that to increase student completion of college-level English and math, community colleges must rethink the use of multi-level remedial course sequences, as well as the standardized placement tests used to sort students into these sequences. We share results from established accelerated models of remediation, including single-semester courses open to students with any placement score (Hern, 2012) and models that enable underprepared students to enroll directly into the college-level course with additional, co-requisite support (Jenkins, Speroni, Belfield, Jaggars, & Edgecombe, 2010). And because changes to the structure of remediation must be supported by changes in the classroom, we offer a set of instructional design principles to help teachers move away from traditional, decelerated approaches and offer high-challenge, high-support accelerated courses (Hern & Snell, 2013).

The project began in June 2010, when we published an article in the newsletter of the California community college system's Research and Planning Group (RP Group), focusing on the problem of attrition in long remedial sequences and the improved results our own colleges were seeing in shortened, redesigned English and math curricula (Hern & Snell, 2010). We hoped to spark a statewide conversation and, perhaps, inspire colleges to offer their own accelerated models of English and math. But we recognized that curricular change is difficult, particularly in California, where all 112 community colleges are locally governed. Our first grant proposal

included modest goals: by Fall 2013, we aimed to give workshops to 40 community colleges and support 5 colleges to pilot accelerated remediation.

We have far exceeded those early goals. As of December 2013, faculty and administrators from almost all of the state's 112 community colleges have participated in CAP workshops, and 42 colleges have offered redesigned accelerated courses in English and math through a year-long professional development program offered with 3CSN. Even more exciting are the results from early pilots. A third-party evaluation by the RP Group examined 16 colleges that began offering accelerated courses with CAP in 2011-12 and found that students' odds of completing college-level gateway courses were 2.3 times higher in effective accelerated English pathways than in traditional remediation and 4.5 times higher in accelerated math pathways (Hayward & Willett, 2014). Beyond student outcomes, a fiscal analysis conducted by the National Center for Inquiry and Improvement showed that the accelerated math pathways being piloted in CAP significantly lower colleges' costs-per-completer, enable colleges to reallocate resources from remediation to transferable courses, and offer significant economic benefits to students through reduced book/tuition expenses and wage increases from expedited completion (Hern, Snell, & Harrington, 2014).

This article describes key factors that have helped to build the momentum for change across California's community colleges, as well as the challenges we've encountered. We hope that examining a grass-roots, faculty-driven reform effort will be useful to community college practitioners both within and beyond California. States with decentralized governance structures might consider whether a similar effort could be built locally. More centralized states might take the lessons we are learning college-by-college and do what California hasn't yet been able to –

transform remediation system-wide, so that more effective accelerated pathways are available to all students, not just those lucky enough to get into a pilot section.

Clarity about a Shared Problem

The Community College Research Center study cited above (Bailey et al., 2009) went a long way toward focusing attention on the tremendous attrition in developmental education nationwide, demonstrating that the lower down students begin, the less likely they are to pass a college-level gatekeeper course. A California-wide study revealed the same basic trends (Perry et al., 2010). But in presentations to faculty, we have found that this research doesn't automatically mobilize people to action. One response we encountered early on was: *We don't have this problem at my college.*

To teachers, attrition in a multi-course sequence has been an invisible problem. We only see the students in our individual classrooms. Some pass, some don't, and when the semester is over, we get a new batch of students. Aside from the few who keep in touch, we don't usually know what happens to students after the semester, and we certainly don't know what happens to students across all sections of our program. For the most part, if we have looked at quantitative data on student outcomes – say, for a program review or federal grant – we have typically focused on pass rates in individual courses, rather than longitudinal cohort studies.

To make the invisible visible, CAP and 3CSN partnered with the RP Group and the California Community Colleges' Chancellor's Office to build a new tool for the statewide data repository: the Basic Skills Cohort Tracker. With a simple online interface, faculty from across the state's 112 community colleges can pull up data on student progression through their basic skills sequences in reading, writing, math, and English as a Second Language (ESL), following cohorts of

students from their first enrollment in a given discipline through their completion of transferable college-level courses.

For example, if a faculty member at San Diego's Cuyamaca College wants to know how basic skills math students are doing, and she's especially interested in the ones who start low in the sequence, she can go to the Tracker, format her request with a simple pull-down menu, click View Report, and immediately have her answer: 106 students started three levels below college math in Fall 2008, and three years later, three of those students had completed a transferable math course (3%), including repeated attempts (Basic Skills Cohort Tracker, Fall 2008-Spring 2011). What if she extended the timeframe to five years? Back to the pull-down menu; adjust the end term; view report. Now, it's seven of those 106 students (7%) (Basic Skills Cohort Tracker, Fall 2008-Spring 2013).

As we encourage faculty to focus on this problem, we stress that it isn't that their college is doing a bad job, or that they are bad teachers. The Cohort Tracker makes clear that the problem is not only shared by community colleges statewide, but that it is built into the structure of a multi-level course sequence. Basically, the more *opportunities* there are to lose students, the more students community colleges will lose. This is especially true among low-income students, who face multiple pressures pulling them away from school. And it is especially true in remedial math and English courses, where students earn no credit, make no progress toward a longer-term credential, and often face material that has frustrated them in the past (grammar, algebra).

Since the debut of the tool in early 2012, we rarely encounter faculty who believe their multi-level remedial sequence is somehow different. And if we do, it's easy to demonstrate that even their college – with its great pedagogy, counseling, tutoring, learning communities, you name it – is losing huge numbers of students inside multiple layers of remediation. We encourage other

states – particularly those with decentralized governance structures -- to consider developing their own version of the tool. It elegantly demonstrates the need for reform and, going forward, makes it easy for colleges to track the outcomes of redesigned curricula.

Results from Accelerated Models

Early on, as we shared the research showing that the lower down a student is placed, the lower their completion of a gatekeeper course, we'd often hear something like, "Well, what do you expect? They can't even add fractions." In other words, students' placement is an indication of their limited abilities, and these limited abilities are the cause of their low completion rates. Remediation is premised on the idea that students need these courses and that, without them, they cannot handle the challenge of the higher level. Mobilizing faculty for change requires taking on this largely unquestioned belief. Faculty need to see that students do not, in fact, need all those layers of remediation. They need to know that across colleges and instructors, students in redesigned, accelerated remediation have higher completion rates of college-level courses, including students who score low on standardized placement tests.

On the English side, CAP workshops feature results from several established models of acceleration (see the chapter in this volume on the Accelerated Learning Program at the Community College of Baltimore County, and Jenkins et al, 2010). At Chabot College in California, developmental students with any placement score can take just a single pre-collegiate semester of integrated reading and writing instruction. The accelerated class functions as a kind of "junior varsity college English." Students do the same kinds of reading, thinking, and writing required at the higher level, but faculty understand that they are not yet as skilled as more advanced students. The class features longer class periods and more scaffolding than a college-level class, such as

activities to help students grapple with challenging readings, in-class writing support, and explicit guidance to acculturate students to the expectations of the college environment.

Descriptive data from the Basic Skills Cohort Tracker show that for more than a decade, students who have chosen Chabot's accelerated single-semester accelerated course have completed college English at rates 23-26 percentage points higher than students who opted for the two-semester remedial pathway (Hern, 2011). A study conducted by CCRC used two kinds of statistical modeling (regression and propensity score matching) to control for pre-existing student characteristics and found that, within five years, accelerated students were 17-22 percentage points more likely to complete college English, seven to 10 percentage points more likely to have transferred or qualify as "transfer ready," and four to six percentage points more likely to have graduated than their non-accelerated peers (Edgecombe, Jaggars, Xu, & Barragan, 2014).

On the math side, CAP workshops encourage faculty to develop accelerated remediation by first asking *which math* students need for success in their chosen college pathway. Instead of simply repeating all of K-12 mathematics through Algebra II, accelerated math pathways align remediation with the specific college-level math requirements students will take – more extensive algebra for students heading toward calculus, less algebra and more quantitative reasoning and data analysis for students taking statistics or liberal arts math. The pathways approach to math remediation, a centerpiece of recent national recommendations for increasing college completion, is being implemented across the country through the Carnegie Foundation's Statway and Quantway initiatives; the New Texas Mathways Project run by the Charles A. Dana Center at the University of Texas at Austin; and reforms in Colorado, Virginia, North Carolina, Indiana, Florida, and other states (Burdman, 2013; Charles A. Dana Center, Complete College America, Education Commission of the States, Jobs for the Future, 2012).

In California, Los Medanos College was the first to implement an accelerated pathway through Statistics, with the launch of Path2Stats in 2009. Path2Stats is a one-semester pre-Statistics course with no minimum placement score, for students pursuing non-math-intensive majors. Descriptive data from the first several student cohorts showed that completion of college math was three times higher among accelerated students than students in the traditional curriculum. These results are especially impressive given that the Path2Stats group was studied for just one year with no repeats, while the traditional group was studied for three years, including repeated attempts. In other words, Path2Stats tripled the student completion in one-third the time (Hern, 2012). Inspired by Los Medanos, most colleges working with CAP are piloting a local version of an accelerated pre-statistics course that replaces two to four courses in the traditional remedial curriculum.

The Need to Rethink Placement

In addition to sharing evidence from successful English and math models, we encourage colleges to be skeptical of the placement tests they're using to sort students into multiple semesters of remediation. Recent research has raised questions about these tests and pointed to the widespread under-placement of students into remediation (e.g., Scott-Clayton, 2012; Belfield & Crosta, 2012; Hetts, Fuenmayor, & Rothstein, 2012). In math, there is the additional problem of curricular misalignment. For students going into non-math-intensive pathways – e.g., humanities and social science majors who take Statistics as their quantitative requirement – access to college-level courses is determined by a test of their algebra skills, even though very little algebra is needed for success in these courses. The misalignment inherent in algebra-based testing and remediation suggests a promising direction for the future: redesigning placement processes so

that students' algebra skills only determine access to courses where those skills are in fact required.

Among colleges piloting accelerated pathways, faculty often express concern about whether the lowest-placed students can handle the demands of an accelerated course one level below college, and some CAP colleges have placed pre-requisites on their accelerated courses. Part of the concern is pedagogical – faculty worry about how they can support students who have weak reading or numeracy skills to be successful. This concern is important to address through faculty development (see section to follow), but it can also be examined empirically, by looking at how the lowest-placed students perform in accelerated pathways.

In their evaluation of CAP pilot colleges, the RP Group found that students at all levels of remediation, including three and four levels below college, saw gains in accelerated pathways, and that the lowest-placed students saw the largest relative increases in their completion of college-level gateway courses. “The implication is that students from an array of skill ranges can be prepared for success in transfer-level English or statistics via an effective acceleration implementation,” Hayward and Willett concluded. “Further, no specific placement level was associated with negative outcomes implying these accelerated pilots adhered to a ‘do no harm’ principle.”

These findings conflict with many instructors' experience in the classroom, which has convinced them that *some* students need a slower path. They can think of specific individuals, students they *know* would not have made it to college-level in one semester. In discussions with these faculty, we don't disagree. We can also recall students who, despite their best efforts, needed more than a semester of developmental work on their reading, writing, and quantitative skills. The problem is that our placement tests don't accurately identify these students.

Outcomes from the Chabot-Las Positas community college district illustrate the weakness of Accuplacer – one of the most widely used placement tests nationally – as a predictor of student capacity. In 2010, we examined eight semesters of data to try to answer a question that often arises among faculty: Should there be a minimum placement score for an accelerated English course? Is there a group of students that is just not successful in the accelerated option? We looked at students who tested below the college-English cut score and enrolled in either the single accelerated course or the developmental course two levels below college, examining the relationship between students' Accuplacer scores and their pass rates in either course. We knew that, as a group, accelerated students were more likely to go on to complete college English over time, but we wondered about how students fared in the first developmental course, particularly low-scoring students.

What we found was surprising. Even the lowest-scoring students – those scoring below 50 on both the Accuplacer reading and sentence skills tests, less than 5% of the student population in the district – passed the accelerated, one-level-below English course at a rate of 48%. More surprising: these students *did no better* in the slower-paced course two levels below, where their pass rate was 45% (Chabot results presented in Hern, 2011). These are students whose test scores would place them into three or more remedial courses at many institutions, or who might be denied access to college for being “below the floor.” And yet, nearly half of them were succeeding in a challenging course one level below college English.

In CAP workshops, we encourage faculty to let go of their certainty that students' placement scores reflect the level of challenge they can – or more importantly, *can't* – handle. And we encourage them to redirect their concerns: Instead of trying to keep weak students out of challenging classes, we argue that they need to be worried about using weak standardized tests to

block capable students from courses in which they can be successful, particularly when requiring even a single semester of additional remedial coursework is correlated with significantly lower completion rates.

Policy Challenges to Transforming Math Remediation

Despite their promising results, California community colleges are having difficulty scaling accelerated math pathways because of transfer articulation policies at the University of California and the California State University systems. Current UC and CSU policies prescribe algebra-based remediation for all students, regardless of their intended program of study. In setting their policies, the four-year universities have been inclined to apply a single, high school-based standard of “college readiness” in mathematics, despite the clear mismatch of this standard for transfer students. Having chosen a major and completed 60 transferable college credits – including a rigorous college-level quantitative requirement – community college transfer students have more than demonstrated their readiness for college. Given that they are half-way through college, their high school coursework is no longer an appropriate indicator of their abilities. Nevertheless, current policies serve as a de facto mandate from the four-year universities that community colleges require multiple levels of non-transferable remediation of high school requirements.

While these policies remain in place, the 21 community colleges piloting accelerated statistics pathways with CAP are using an internal mechanism to navigate this obstacle. Partially in response to a lawsuit in the 1990s from the Mexican American Legal Defense Fund, the California community college system has a number of protections in place to ensure that pre-requisites don't unfairly and disproportionately block students' access to courses in which they

could be successful. One of the protections written into the state’s education code is that community colleges must offer pre-requisite challenge processes to students who demonstrate “the knowledge or ability to succeed in the course or program despite not meeting the prerequisite” (California Community Colleges Chancellor’s Office, 2012). At community colleges piloting statistics pathways, intermediate algebra remains the only official pre-requisite for their transferable Statistics courses. But when students demonstrate that they have the ability to succeed in Statistics through their performance in a new pre-stats course, colleges are using their pre-requisite challenge processes to advance them to the higher level.

The CSU’s Chancellor’s Office has signaled to community colleges that it considers this process part of our legitimate purview (CSU Issues Statement, 2013). But even with these legal mechanisms in place, the current transfer policies are having a chilling effect on the spread of redesigned math pathways (Fain, 2013). Math faculty are a risk-averse group, and they don’t tend to like policy gray areas. As we give workshops around the state, the issue of intermediate algebra and transfer articulation is the single most common question to come up from math faculty, and at a number of colleges, interested faculty are waiting to move ahead until the policies change. To scale up these promising innovations, California needs system-level reform to ensure that community colleges have the authority to design effective remedial math pathways, instead of being forced to remediate students in high school work that is irrelevant to the transfer requirements for their major.

Design Principles and Collaborative Faculty Development Networks

One challenge to scaling up accelerated models of English and math is that the new curricula can represent fairly substantial changes to both *what* and *how* faculty have been

teaching. A teacher who has been focusing only on grammar exercises and paragraph writing needs support to teach classes in which students read books and write text-based academic essays. If a college is going to integrate formerly separate curricula in reading and writing, the reading teachers need support to help students write, and the writing teachers need support to help students be more successful readers. In redesigned statistics pathways, the changes can be even more profound, because many mathematics faculty have done little to no work in the field of statistics (which some argue is “not even math”). Indeed, some of the faculty who stepped forward to teach the first accelerated pre-statistics courses in California had never taught statistics before. Adding complexity to their challenge: there are no textbooks on the market for this kind of class, no time-tested curriculum they can adopt. At times during their first semester, the math faculty in CAP have felt like they were barely a week ahead of their students, the teaching equivalent of being on a high wire without a net.

In supporting faculty to teach accelerated English and math pathways, we do not require them to faithfully adopt a single pre-set curriculum. Instead, we offer a set of five design principles for teaching in high-challenge, high-support accelerated pathways for underprepared students, principles we have seen be particularly powerful in our own classrooms. Laid out in detail in a recent policy brief from LearningWorks (Hern & Snell, 2013), the principles involve engaging students in the same kinds of challenging, higher-order tasks they will be asked to do in a college English or Statistics course, and providing just-in-time, contextualized remediation on skills needed for the more challenging work (e.g., individualized grammar support as students write essays; pausing to review an algebraic or arithmetic skill needed in a particular data analysis assignment). The principles also stress the need for classroom practices addressing the affective issues that can get in students’ way (e.g., fear, fixed mindsets) and the importance of low-stakes,

collaborative practice to help students build confidence and mastery before a higher-stakes assessment. These principles help to ground faculty and lower anxiety as they transition to new approaches, without imposing an off-the-shelf curriculum or overly constraining their creativity as teachers.

Another factor that has helped – tremendously – is for faculty to come together in collaborative peer networks to get ideas, energy, and support from one another. With funding from the state and private foundations, the CAP Community of Practice has made the space for this across California. Participating faculty attend three multi-day workshops during their first year of teaching a new accelerated class, to learn from teachers who have experience with accelerated models, engage with sample curricular materials, and get specific ideas they can use in their own classrooms. In math, the Community of Practice has been a major venue for addressing the lack of textbooks or established curricula for accelerated pre-statistics courses, as participating faculty share materials with one another. The CAP website is also a major resource for faculty transitioning to acceleration, with videos, sample assignments, and magazine-style spotlight articles featuring accelerated classrooms across California (<http://cap.3csn.org>).

In addition to the larger statewide network, faculty are building local peer-to-peer support networks on their own campuses. At many colleges, the early-initiator faculty who participated in CAP have gone on to support other faculty as colleges increase their accelerated offerings. They lead workshops, write blogs, organize online resource sharing, and keep their office doors open for fellow faculty.

Our work in California has shown that tremendous momentum can be unleashed when teachers are committed to a reform movement. But it also has made clear that when faculty are teaching in a new way, they need support. Policy makers can and should make structural changes

to enable more students to complete college-level gateway courses, but to be truly successful, remediation reform must also address what and how faculty are teaching. We urge colleges and state systems to build in intentional resources to support this kind of work.

From Successful Pilots to System-Level Change?

To mobilize for change, faculty need to see that the current remedial system has the unintended consequence of weeding students out of college. They need to see that students are more capable than our placement tests have led us to believe, and that they can be successful in accelerated models. And they need to believe that if they redesign their curriculum, they won't be setting students up for failure. On the last issue, while data from other colleges help, it's nevertheless a leap of faith to create and teach a new accelerated course, and most teachers go into it with a combination of excitement and fear. They don't want students to fail, and they don't want to fail as teachers. Supportive, peer-led professional development is therefore essential to helping faculty shift from traditional, decelerated models of instruction.

The above factors have made it possible to mobilize faculty from 42 independently governed community colleges to pilot redesigned, accelerated pathways for under-prepared students, and early data show these efforts are paying off for students. This is far more than we had hoped for in the early days of the California Acceleration Project, and we are thrilled with the progress that has been made. And yet, it is not enough. Too many students are still disappearing inside long remedial course sequences before making progress on their educational goals. The next phase of our work must involve moving beyond pilots to create system-wide change.

In states with more centralized governance, new structures for remediation are being mandated system-wide, sometimes driven by legislation (Florida, Connecticut), at other times by

change processes that include faculty (Colorado). But in many of these cases, the perception that reforms are being imposed top-down means that faculty often do not own the change. Structural and policy changes are not supporting changes to instruction and in some cases may be undermined by ground-level implementation.

In California, there has been little to no curricular direction from the top. The legislature and state chancellor's office have provided professional development funding to improve outcomes among under-prepared students, but they have imposed no mandates or accountability mechanisms regarding what the reform should look like. Colleges that want to continue requiring students to complete four layers of remediation in reading, writing, and math remain free to do so without interference from the state. The movement to transform remediation is, instead, a grass-roots, faculty-led, college-by-college effort. Individual faculty step forward to develop accelerated models for their local context, and they start with a few sections at a time. The faculty leading the effort tend to believe deeply in the changes they're making, and they often report that their love for teaching is re-invigorated as they move away from old models of remediation (Foth, 2013). There's not just "buy-in," there's a deep sense of ownership among participating faculty. And yet, faculty champions often contend with a lack of support from their department and sometimes even active, hostile opposition from other faculty (Bickerstaff, 2014; Hayward & Willett, 2014; Hern & Snell, 2013). The status quo has inertia on its side, and faculty who oppose curricular change can often block promising reforms or simply refuse to teach in new models.

So how can we shift the balance away from the current, broken system? How do we ensure that effective, accelerated curricula are available to all students, not just those lucky enough to get into a pilot section? Can system leaders, trustees, and administrators incentivize and support colleges to redesign remediation, without undermining faculty ownership and commitment? And

can it happen at a pace commensurate with the urgency of the problem? This is a critical question for the next phase of the work to transform remediation on behalf of our students.

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