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Examining a Rupture in the Latina/o College Pipeline: Developmental Education in California Community Colleges

Executive Summary

This policy brief highlights the trajectories of Latina/o students who test into developmental coursework at California community colleges and brings attention to the obstacles created by these courses. The authors use quantitative data from the Basic Skills Progress Cohort Tracking Tool (Progress Tracker) from the California Community Colleges Chancellor's Office. They examine the placement, course attempts, and course success numbers for Latinas/os. Based on the findings, the authors offer suggestions for improving Latinas/os' developmental education completion rates.

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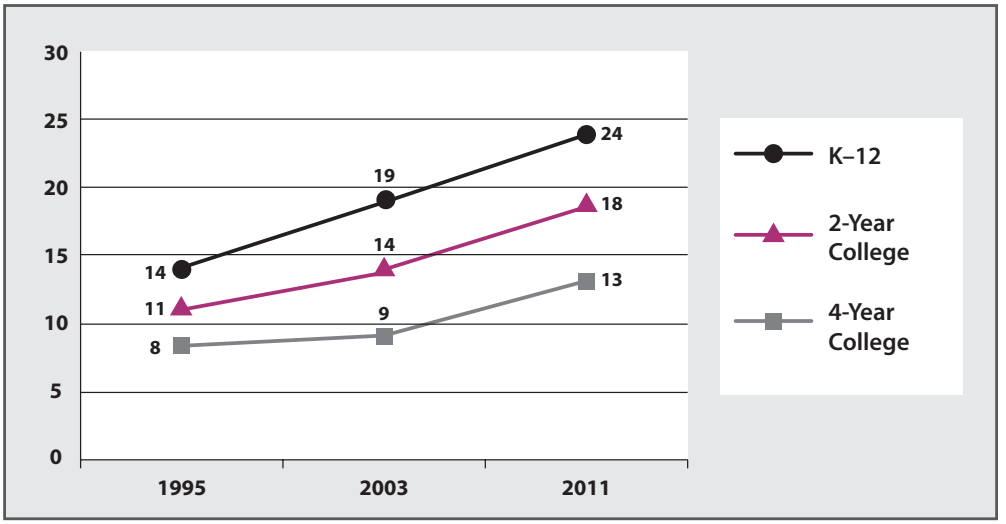
STATUS OF LATINAS/OS IN THE K–16 EDUCATIONAL PIPELINE

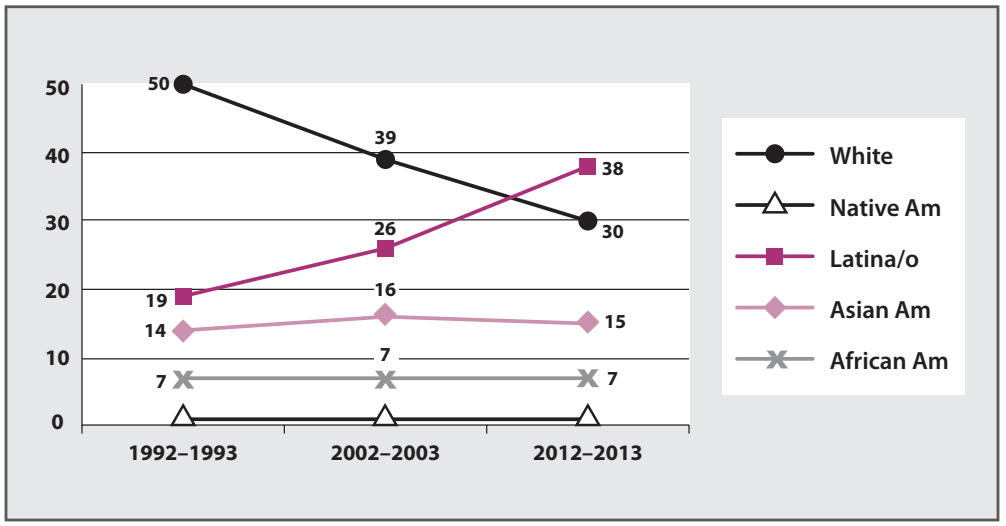
In the United States, Latina/o students are the largest and fastest-growing group in the K–12 education sector (Lee et al., 2011; Lopez & Fry, 2013; U.S. Census Bureau, 2012).[1] Nationally, in 2011, there were over 12 million Latina/o students in K–12 — 24% of the overall total student population (U.S. Census Bureau, 2011a). Figure 1 illustrates the steady increase in Latina/o population across the K–12, community college, and four-year college systems at the national level. Figure 1 also demonstrates the increase in the enrollment gaps between the K–12 and postsecondary systems. The Latina/o student population in community colleges will continue to increase due to the large K–12 population and since they are more likely than any other racial group to choose a community college (Kurlaender, 2006; Provasnik & Planty, 2008). For instance: 51% of first-time Latina/o college students enroll in a community college (American Association of Community Colleges, 2012).

Figure 1: Latina/o Enrollment in the K–12, 2-Year College, and 4-Year College Sectors in the U.S. (1995–2011)



Data Source: U.S. Department of Education, National Center for Education Statistics: Table 44. Enrollment and percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and region: Selected years, fall 1995 through fall 2011 and IPEDS Data; analysis by authors.

Figure 2: California Community College Enrollment by Race (1992–2011)



Data source: California Community Colleges Chancellor's Office, 2012.
Note: Missing percentages represent "Other" racial/ethnic category.

California Latina/o student demographics are nearly double the nationwide rates. In 2012–2013, 53% of all California's K–12 students were Latina/o (California Department of Education, 2013). Figure 2 shows that the Latina/o enrollment in the California Community College (CCC) system is at an incline, while white student enrollment is declining. In 2010, Latinas/os surpassed the white student population as the largest group in the CCC system and now represent 38% of CCC students.[2] These data make clear that community colleges represent an increasingly vital postsecondary entry point for Latina/o students.

In the United States, two-year colleges traditionally have represented access to higher education and pathways to educational opportunity. Nationally, the two-year college system serves over 13 million students (American Association of Community Colleges, 2012). Historically, California has

[1] Currently, Latinas/os represent 17% of the overall United States population (U.S. Census Bureau, 2011b). This percentage is expected to continue increasing since Latinas/os have: 1) the highest U.S. birth rate, at 18.7 births per 1,000 population (Martin et al., 2012); 2) a life expectancy of 81.4 years, the highest in the United States; and 3) large and growing immigration numbers from Latin America (Hoyert & Xu, 2012).

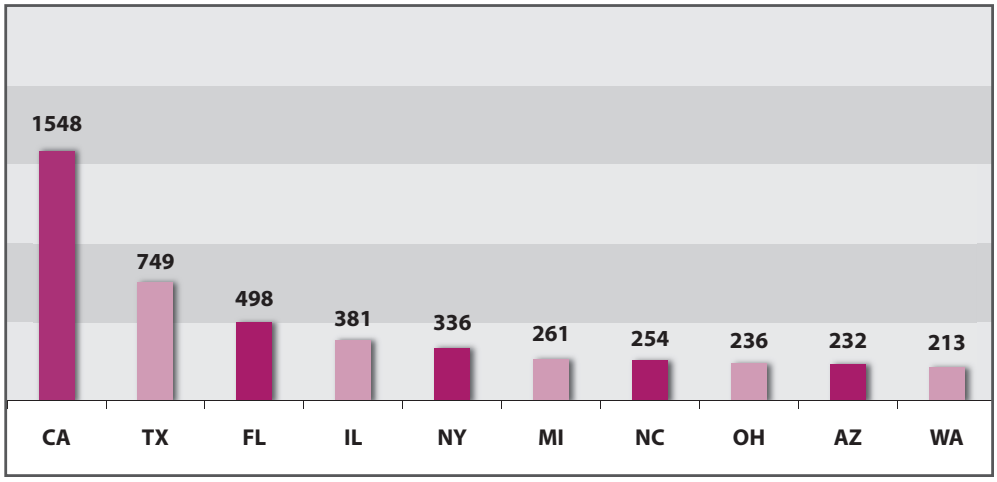
[2] Notably, 80% of California Latina/o postsecondary students first enroll in community colleges (Moore & Shulock, 2010). Around 20% of first time Latina/o college students are enrolled in the other two postsecondary segments — the California State University (15%) and University of California (5%) systems.

the largest community college system in the nation (Coley, 2000; Solórzano, 2012). In 2011–2012, 2.6 million students enrolled in the 112 CCC campuses — 25% of U.S. community college students (Student Success Task Force, 2012; U.S. Department of Education, 2011). As Figure 3 demonstrates, California's community college enrollment numbers are more than double any other state and make the California Community College system an ideal site for studying the promises and challenges in community colleges.

STATUS OF LATINAS/OS IN COMMUNITY COLLEGES

In the CCC system, relatively few Latina/o community college students persist to transfer, obtain a certificate, or complete a degree. The CCC system is designed to provide basic skills education, lifelong learning opportunities, career and technical education (CTE), and the opportunity to transfer to four-year colleges. On average, out of 100 Latinas/os who enroll in a CCC, four will complete a CTE degree and 14 will transfer to a California State University (CSU) and/or a University of California (UC) campus (Figure 4).[3] Therefore, over 80% of Latinas/os leave the CCC without a certificate, degree, or transfer. Indeed, in spite of increasing enrollment, the community college system also represents the point in the educational pipeline where the greatest numbers of Latina/o students are lost (see Moore & Shulock, 2010; Nunez & Elizondo, 2013; Ornelas & Solórzano, 2004; Rivas, Perez, Alvarez, & Solórzano, 2007; Solórzano, Villalpando, & Oseguera, 2005).

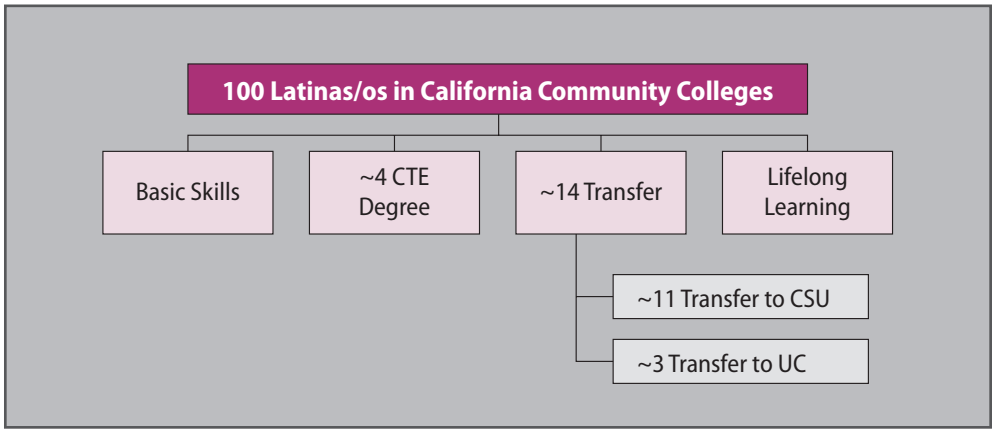
Figure 3: Community College Enrollment by State (in thousands)



Original source of graphic: Bradley (2011). Data source: U.S. Department of Education (2011).

A majority of Latina/o community college students have high educational aspirations and seek transfer to a four-year college (Arbona & Nora, 2007; Crisp & Nora, 2010; Gándara, Alvarado, Driscoll, & Orfield, 2012; Solórzano, Villalpando, & Oseguera, 2005). Despite these clear transfer goals, the vast number of students will be unsuccessful in this pursuit. Traditional community college pathway models may appear to follow a linear logic and facilitate transfer to a four-year college within two years of full-time enrollment. In reality, the experiences of community college students are non-linear, part-time, and take longer than two years. Pathways for these students often contain multiple start and stop-out points, as well as changes to the desired pathways outcomes (Solorzano, Datnow, Park, & Watford, 2013). This complexity can be partially explained by the numerous transition points in the processes and the variety of specialized programs offered by community

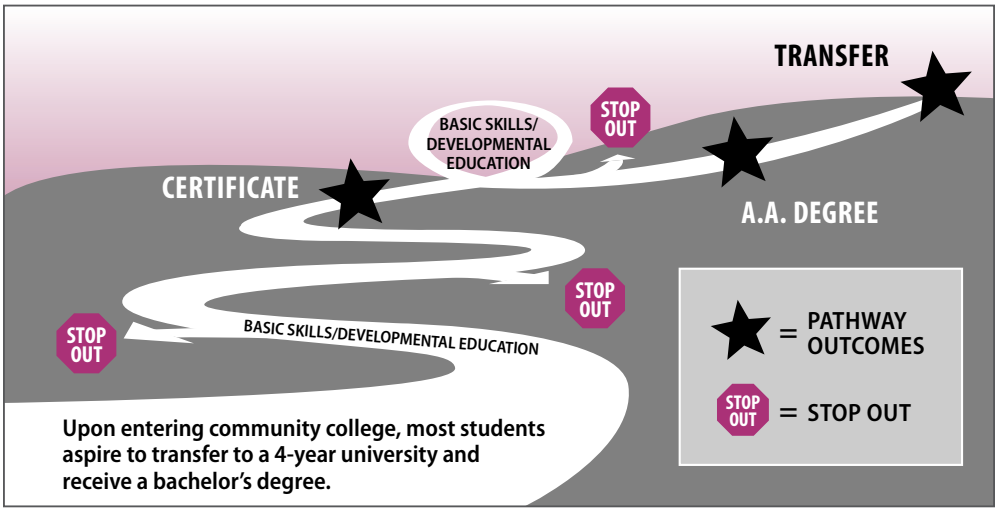
Figure 4: The Latina/o California Community College Pipeline (2010)



Data source: Moore & Shulock, 2010.

[3] Because the proportion of proprietary college students is small compared to the proportion of public community college students, and to highlight our focus on students' experiences in the California Community College system, we have excluded proprietary students from Figure 4. We focus on public institutions because they provide higher education access and opportunity to the largest number of Latina/o students.

Figure 5: Pathways Through Community College Are Often Non-Linear



Original source of graphic: Solórzano, Datnow, Park, & Watford, 2013.

colleges. Figure 5 illustrates the non-linear nature of community college pathways. Several factors contribute to the stop-out points, including the lack of required classes, inadequate counseling, financial challenges, family responsibilities, and experiences in developmental education.[4] In California, the current developmental education system prevents the majority of Latinas/os from completing the course requirements for a certificate, associate's degree, or bachelor's degree (Solórzano, Acevedo-Gil, & Santos, 2013; Weissman, Butcher, Schneider, Teres, Collado, & Greenberg, 2011).

STATUS OF DEVELOPMENTAL EDUCATION IN COMMUNITY COLLEGES NATIONWIDE

Developmental education coursework is designed to support students who are academically underprepared. After submitting a community college admissions application, students take a standardized multiple-choice placement test to measure academic competencies in math, English writing, and English reading.[5] Test scores determine whether students can enroll in college-level courses. Those who test below college-level math or English must enroll in developmental courses to increase their skill sets.[6] Students can test up to five levels below college-level courses; meaning that students would have to navigate and pass five semesters of courses before enrolling in their first college-level course (Bailey & Cho, 2010). Once students complete the required preparation course(s) they become eligible to enroll in college- and/or transfer-level "gatekeeper" coursework (Grubb et al., 2011a). Nationwide, about 60% of all students test into at least one developmental course (Bailey, 2009). During 2012, 85% of all California community college students assessed below transfer-level math and 72% below transfer-level English[7] (California Community Colleges Chancellor's Office [CCCCO], 2012). In other words, students entering California community colleges are assessed into developmental

CALIFORNIA COMMUNITY COLLEGE COURSEWORK

Community college students have a variety of courses available to them. Some are required of all students in particular programs, while others are mandated based on placement testing results.

College-level courses allow students to earn community college credit, but the credits do not transfer to four-year institutions.

Transfer-level courses allow students to earn college credits that can be used in preparation for transfer to four-year colleges.

Developmental education is also sometimes called "remedial" or "basic skills" education. Students are required to enroll in these courses if they need preparation in order to pass college-level coursework that is required for their certificate, associate degree, or four-year college transfer programs. These courses can cover a range of subjects, but in this brief we focus on two basic skills subjects: math and English writing.

[4] See Nunez & Elizondo, 2013 and Solórzano, Acevedo-Gil, & Santos, 2013.

education at higher rates than the national average.

If developmental education courses function as intended, students progress through and move on to coursework that advances them toward certificates, associate degrees, or transfer to four-year colleges. However, the majority of Latina/o students do not progress through the developmental education course sequence in this manner (Solórzano, 2012). Therefore, the purpose of this brief is to:

1. Describe the known limitations of developmental education.
2. Examine the trajectories of Latinas/os who enroll in these course sequences.
3. Highlight promising practices.
4. Provide recommendations to improve the completion rates of Latinas/os in developmental education.

LIMITATIONS OF DEVELOPMENTAL EDUCATION: OBSTACLES CREATED BY ASSESSMENT PROCEDURES AND COURSEWORK

Placement assessments are limited measures of student ability. Regrettably, the majority of students take placement assessments without first receiving information regarding the importance and implications of the results on their educational trajectories (Venezia, Bracco, & Nodine, 2010).[8] Consequently, students may prepare inadequately for these highly significant exams. Regardless of preparation, English assessment exams misassign 30% of students by placing them in a class lower than necessary (Belfield & Crosta, 2012). Moreover, placement exams are not diagnostic and only generate a single score that does not diagnose the specific areas of needed improvement within a subject (Grubb and Gabriner, 2013). In fact, high school courses and multiple other measures have been shown to better predict success in college (Belfield & Crosta, 2012; Geiser & Santelices, 2007; Geiser, 2003; Ngo, Kwon, Melguizo, Prather, & Bos, 2013). Moreover, after assessing into developmental education, about two-thirds of students do not enroll in the coursework, thus limiting the likelihood that they will pursue a certificate or degree (Bailey, et al., 2009). Finally, assessing into developmental education can be a key event that lowers the academic confidence of students, and more research is needed to examine the effect of the placement exam on a student's pursuit of academic goals (Bickerstaff, Barragan, Rucks, Ahidiana, 2012). Despite the downfalls of developmental education assessment, in 2009–2010, California alone spent $1.8 billion on math, English, and reading placement tests (CCCCO, 2011).

Developmental education is envisioned as a set of supplementary courses that aid student acquisition of college-level English and math skills. In theory, this is important and worthwhile preparation. In practice, however, students testing into low levels of developmental education face numerous challenges (Burdman, 2012). For example, studies find that the majority of students who begin developmental education course sequences do not complete them (Bailey, 2009; Bailey, Jeong, & Cho, 2010). Also, students who do complete developmental courses may lack institutional support to enroll in or pass the related transfer-level courses (Burdman, 2012).

Traditional developmental education coursework creates additional obstacles for students. As the number of required developmental courses increases, so do the potential stop/exit points in a student's pathway, which greatly diminishes students' likelihood of completing transfer-level math and English courses (Grubb et al., 2011b; Hern, 2012; Solórzano, 2012). Furthermore, students typically do not receive graduation or transfer credits for developmental courses, which increases the time needed to gain a certificate, degree, or transfer. This can also cut into their financial aid packages, creating an additional financial burden (Burdman, 2012). Given the increasing costs of tuition,[9] dwindling availability of financial aid, and limited course offerings, these considerations should not be taken lightly.

[5] An expanded explanation of California math assessment and placement procedures can be found in Melguizo, Prather, & Bos (2013).

[6] For more information regarding course requirements for transferring, certificates, and degrees, see Fong, Melguizo, Prather, & Bos (2013).

[7] The exact percentage for Latinas/os is unavailable since the CCCCO does not collect data disaggregated by race for the students who place below developmental education.

[8] However, some research suggests that placement tests are weak predictors of student performance in transfer-level courses (see Burdman, 2012).

Teaching in developmental education courses needs much improvement. Instructors in developmental education courses in math, English writing, and reading primarily use a "remedial pedagogy," which emphasizes the correct answer through drill and practice of small sub-skills (Grubb and Gabriner, 2013). A remedial pedagogy is decontextualized and does not emphasize student interactions. Remedial pedagogy results in disengaged students. Finally, many of the instructors in developmental education are part-time adjunct faculty and do not receive much-needed professional development opportunities (Gerstein, 2009). Regardless of employment status, instructors in community colleges are not required to have formal training in instructional methods and may be unfamiliar with multiple methods of teaching (Grubb, 1999).

METHODOLOGY

Tracking Latina/o Students Through CCC Developmental Education

The educational pipelines in this brief are drawn from the Basic Skills Progress Cohort Tracking Tool (Progress Tracker) data (during October 2013) provided by the CCCCO. The Progress Tracker follows cohorts of students in four general areas in all 112 CCCs: English reading, English writing, ESL, and math. The cohorts of students were established when students first enrolled in basic skills courses in fall 2009. The data capture student placement, course attempts, and course success numbers. Customized searches allow for disaggregation of data by demographics and specific financial aid characteristics.

In this policy brief, we focus on the progress of Latina/o students in developmental math and English writing over a four-year period (fall 2009 to spring 2013). We focus specifically on the number of Latina/o students who began at each level of developmental education and the number of students who later successfully passed transfer-level courses in English and math.

[9] Since the 2009–2010 academic year, California Community College tuition has increased from $26 to $46 per unit. This change in fees represents a 177% increase over four academic years. Thus, the tuition cost per year for a full-time student has increased from $624 (2009–2010) to $1,104 (2012–2013) (CCCCO, 2013).

[10] We chose to include students at all levels of developmental education to acknowledge their higher education aspirations.

[11] The assessment levels for English are: Level 1 – One level below Freshman Composition; Level 2 – Two levels below Freshman Composition; Level 3 – Three levels below Freshman Composition; Level 4 – Four levels below Freshman Composition. The assessment levels for Mathematics are: Level 1 – Intermediate Algebra/Geometry; Level 2 – Beginning Algebra; Level 3 – Pre-Algebra; Level 4 – Arithmetic. See: Perry, Bahr, Rosin, & Woodward (2010).

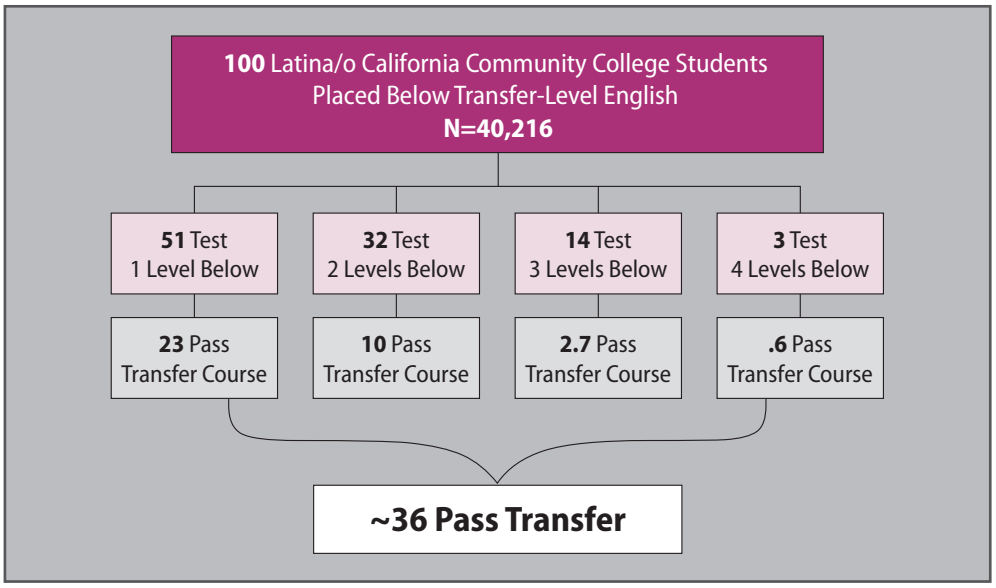
[12] As with all large institutional data sets, CCCCO data does have limitations — namely, all data are self-reported by each college campus. Additionally, access to disaggregated data regarding student enrollment at the state level is limited. Nevertheless, the statewide data are used by the CCCCO to conduct analysis and publish reports.

STUDENT TRAJECTORIES: STATUS OF LATINAS/OS IN DEVELOPMENTAL COURSE SEQUENCES

To explore how the shortcomings in developmental education assessment and implementation affect California's Latina/o community college students, we examined their trajectories in the math and English developmental course sequences.[10] The results demonstrate that students' initial placement can put them on a path that greatly affects whether they successfully persist to degree or transfer.

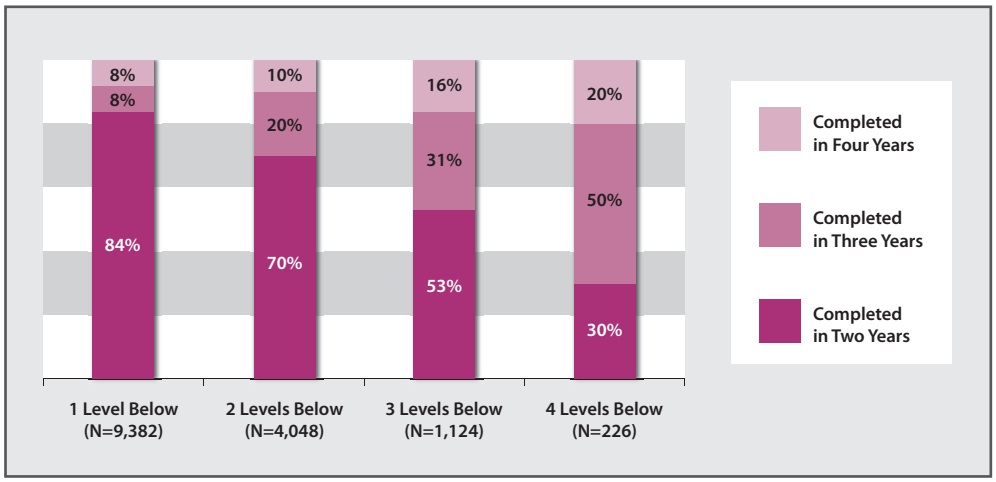
Latinas/os' success in developmental English coursework is related to initial placement level. When a Latina/o student begins a CCC trajectory with developmental education courses, the lower she or he is placed below transfer-level English courses, the lower the likelihood of success in the related transfer-level coursework.[11] Figure 6 illustrates that in California, out of 100 Latina/o students who begin in developmental English, only 36 will pass a transfer-level course in a four-year period.[12] When examining the pathway of the three students who begin four levels below transfer-level English, only 20% (.6 students) will pass a transfer course. On the other end of the spectrum, 23 of the 51 students (or 45%) who start one level below will complete a transfer English course within four years of enrolling in a community college. In other words, students who begin at Level 1 are 2.25 times more likely

Figure 6: California Latina/o Developmental English-Writing Education Pipeline



Data source: CCCCO, Basic Skills Progress Tracker Data, Fall 2009–Spring 2013.

Figure 7: Distribution of Transfer-Level English Course Completions of Latinas/os (N=14,780)



Data source: CCCCO, Basic Skills Progress Tracker Data, Fall 2009–Spring 2011, Fall 2009–Spring 2012, Fall 2009–Spring 2013.

than their Level 4 counterparts to pass a transfer-level English course.

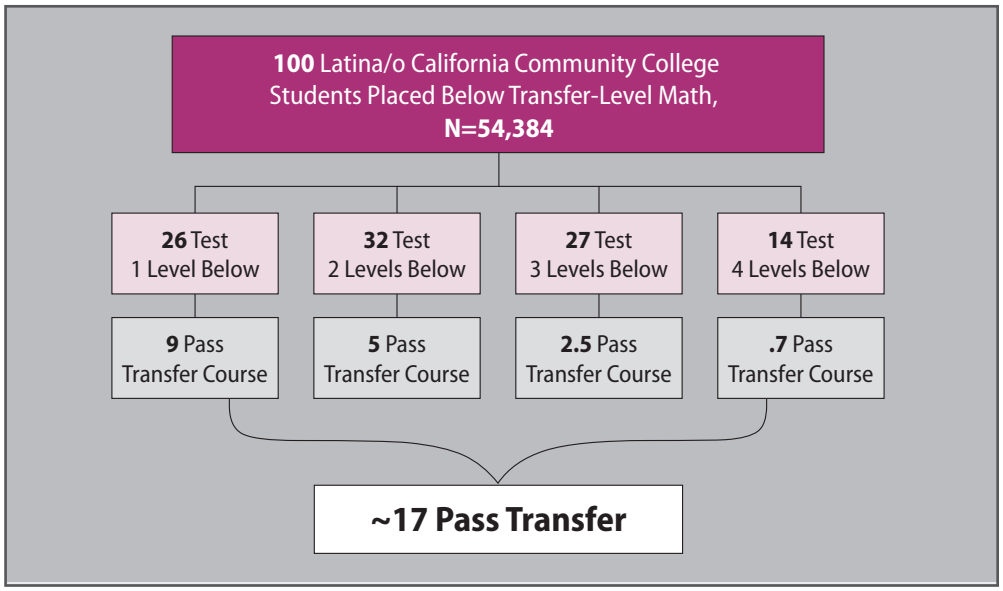
While the vast majority of Latina/o students assess into developmental English at one or two levels below, the data in Figure 6 indicate that students at all assessment levels are having trouble completing college-level English within four years of enrollment. It is evident that starting at a lower assessment level is an especially serious impediment to timely progress.

Examining when students complete a transfer course in English allows for a clearer picture of student persistence. Figure 7 shows when Latina/o students in the cohort complete an English transfer-level course. About 84% of students who begin one level below complete transfer-level English within the first two years of enrolling in the coursework. On the other hand, 30% of all students who begin four levels below will complete the transfer-level English requirement two years after enrolling in coursework.

Latina/o students have even greater difficulty advancing through developmental math course sequences, and their success is again related to initial placement. Figure 8 reveals that out of 100 Latina/o students who begin in developmental math, only 17 will successfully complete a transfer-level course in four years. Starting with the longest pathway, 14 students will assess four levels below transfer-level math, but less than one of those students (only 5% of the students who place at this level) will complete the transfer course in a four-year period. Examining the shortest pathway reveals that of the 26 students who test one level below, nine (or 35%) will pass the transferrable math course. Thus, students who assess into one level below transfer math are seven times more likely to pass a transfer-level course than are students who assess four levels below. This again underscores the importance of assessment, placement, and success in developmental math education for Latina/o students.

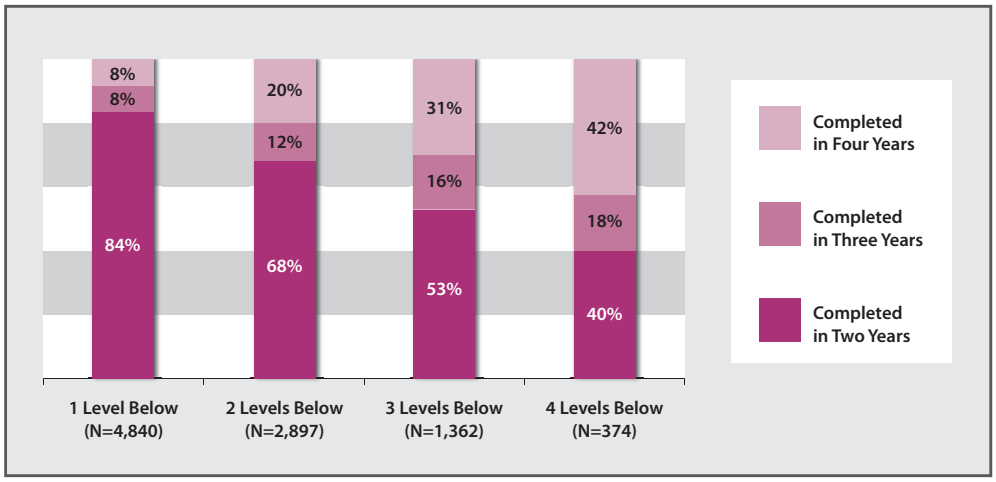
Again, a closer examination of when students complete transfer-level courses in math highlights the continual lack of persistence of students who test in the lower levels. Figure 9 shows how much time it takes for students to complete the transfer requirement in math, given their course placement along the developmental education pipeline. Similar to the data for English courses, 84% of students who place one level below in math complete the transfer-level course

Figure 8: California Latina/o Developmental Math Education Pipeline



Data source: CCCCO, Basic Skills Progress Tracker Data, Fall 2009–Spring 2013.

Figure 9: Distribution of Transfer-Level Math Course Completions of Latinas/os, (N=9,473)



Data source: CCCCO, Basic Skills Progress Tracker Data, Fall 2009–Spring 2011, Fall 2009–Spring 2012, Fall 2009–Spring 2013.

within the first two years of enrolling in the math course sequence. In comparison, 40% of students who place four levels below will complete the transfer-level math course two years after first enrolling in developmental math.

It is important to highlight that a number of students attempt to pass English and math courses more than once. Although data do not allow for an examination of how many times each student took a particular course prior to earning a passing grade, the determination and persistence are clearly demonstrated by the multiple attempts.

PROMISING PRACTICES

In this section we highlight promising practices found in programs that support Latinas/os with developmental English and math. This is a selective list of California-based programs, but more empirical studies are needed to examine how programs support Latinas/os. Given the dearth in research literature that examines successful practices to support Latinas/os in navigating the community college developmental education system, this list is a promising start to improve the English and math transfer-course completion rates of Latinas/os (Solórzano, 2012). These programs are introduced in order of their geographic focus, beginning at the local level and expanding to the state level.

***Metas* – San Jose City College.** Based in the Northern California region, *Metas* provides Latina/o San Jose City College students with access to a wide range of institutional resources and interpersonal support. *Metas*, which means "goals" in Spanish, offers student support services and aims to increase the graduation and transfer rates of Latinas/os. Some of the resources available to participating students are access to campus learning communities, academic counseling, textbook assistance, peer tutoring, and informational workshops related to educational plans, placement exams, and financial aid. There is also a six-week summer bridge program for incoming students with an emphasis on developmental math courses. This campus-specific program promotes peer learning and supplies students with a number of vital support services. In the process, *Metas* illustrates an institutional priority to assisting Latina/o students. **http://www.sjcc.edu/current/academics/special-programs/metas**

***Adelante* First-Year Experience Program – East Los Angeles Community College.** *Adelante* seeks to improve student preparation, retention and transfer through collaboration among instructors, student-tutors, counselors and *Adelante* staff. *Adelante* students are placed in academic cohorts. The cohorts include mathematics, English, science, and liberal arts. *Adelante* provides student services, linked courses, a stimulating learning environment, and committed faculty to provide all *Adelante* first-year students with opportunities to succeed in transferring to a four-year university. To qualify for *Adelante*, students must place in level two or three of developmental education English or place in level two, three, or four of developmental math. Students who place one or four levels below college-level English and one level below college-level math are not eligible for *Adelante*. *Adelante* is focused on stabilizing the transition experiences of new students and strengthening their ability to persist through the transfer process.
http://www.elac.edu/departments/adelante/

UCLA Center for Community College Partnerships (CCCP) Scholars Program – Los Angeles Area. CCCP functions as a liaison between the university and California community colleges. CCCP targets underrepresented student populations, and offers support services and programs to current or soon-to-be-enrolled California community college students. The CCCP scholars program informs students of transfer requirements and processes, and provides monthly mentoring. This program looks to guide community college students through each step of the UC/CSU transfer process, while also serving as a recruitment tool for the host university. Toward this goal, CCCP also has facilitated local community college visits by the UCLA chancellor in order to visibly reaffirm the university's commitment to community college students (Herrera and Jain, 2013). Collaboration between four-year universities and community colleges as embodied by CCCP's program and staff is urgently needed in more regions.
http://cccp.ucla.edu/#/cccp-scholars-program/

***Puente* Program – University of California.** Another older and successful reform in English instruction is the *Puente* Program. It started in 1981 at one community college in California with the goal of addressing the low rate of academic achievement of Mexican American and Latina/o students. Today the program serves 59 community college campuses and 33 high schools. *Puente* is designed to help students complete community college courses and transfer successfully to four-year institutions.[13] The program provides students with: 1) an accelerated writing course sequence that incorporates Mexican American/Latino and multicultural literature through which students progress from pre-transfer-level writing through the transfer-level English composition class, in one year; 2) counseling that provides students with sustained, in-depth career and academic guidance throughout their enrollment at the community college; and 3) mentoring by members of the professional community who are recruited and trained to share with *Puente* students career advice regarding their personal experiences of integrating culture and family with academic and professional success.
http://puente.net

Some of the common practices among these programs include a focus on educating students about transfer requirements and processes, mentoring, and creating a more personalized campus community. However, a lack of adequate funding does not allow these programs to serve all Latina/o students in developmental education. Therefore, eligible participants have to meet certain criteria, including attending school full-time or placing at a certain level in developmental education. *Moreover, the majority of programs do not serve students who place in the lowest level of English and math developmental courses*. A theme that runs across all programs is the focus not only on improving cognitive abilities but also on enhancing non-cognitive skills by providing workshops on topics such as enhancing study skills and time-management abilities.

ONGOING STATE-LEVEL DEVELOPMENTAL EDUCATION POLICIES

Below we share various approaches that Texas, Florida, and California, all states with high Latina/o populations, are taking to address the systemic shortfalls of developmental education.

Texas Success Initiative – Beginning August 2013, all students entering Texas public colleges and universities must take the same Texas Success Initiative (TSI) Assessment, created by the College Board®. Successfully passing this exam allows students to enroll in college-level courses at Texas institutions of higher education, while an insufficient score necessitates enrollment in a developmental education program. However, students who meet specific criteria can be exempt from TSI assessment. For example, exceeding a qualifying score on the SAT® or a similar exam, or transferring into a college or university after completing the required college-level courses, entitles students to an exemption. Veterans also are exempt, but there is no articulation as to how they will transition into appropriate coursework if they need support with math or English skills. Texas can improve their statewide initiative by institutionalizing other forms to measure placement, such as high school grades, which have been proven to be more effective forms of assessment. If students test below a specific cutoff point, then they are only eligible for adult education, certification level 1, or continuing education coursework. However, the TSI does not express a pathway from adult education, certification, or continuing education into transfer-preparation coursework. In other words, TSI serves as an institutionalized tracking mechanism for steering underprepared students into vocational and general education programs. With the Texas legislature and the Texas Board of Education beginning the voting process to eliminate Algebra II from high school graduation requirements, only students who seek out a Science, Technology, Engineering, and Math (STEM) endorsement for graduation will be required to take Algebra II (Stutz, 2013; Weisser, 2013). Without such preparation, students may be unprepared for college-level math when they enter college. The legislative changes aim to allow students to choose a vocational pathway instead of a four-year college degree. Given that those who have some college experience but no associate degree will maintain lower wages and higher unemployment rates than those with associate and bachelor's degrees, this move by the Texas legislature does not support the economic well-being of the state population (U.S. Bureau of Labor Statistics, 2013). Finally, extensive research finds that Latina/o students lack access to academically rigorous secondary education and are steered away from college, which reinforces the assertion that these Texas policies will further result in institutionalized educational tracking (Adelman, 1999; Alon and Tienda, 2005; Cabrera & La Nasa, 2000; California Department of Education, 2011; Gándara & Contreras, 2009; Oakes, 2004; Perna & Thomas, 2006; Zarate and Gallimore, 2005).

Florida Optional Developmental Education – Students who graduate from Florida high schools are no longer required to take placement exams at the 28 public two-year colleges. Students are deemed college ready if they graduate with a high school diploma from Florida, so when they enter the community college system, they select a level of math and English in which to enroll. In 2011, SB1255 established the requirement for 11th-grade students to take a college placement exam. Students who do not place at college level are required to take courses designed as remedial education during their senior year. Ultimately, Florida's approach places most of the responsibility of preparing students for college on high schools and does not state clearly whether students will have ongoing support services, such as tutoring, readily available to them upon entering college-level math and English courses.

California Acceleration Project – In 2010, Chabot College in California began accelerating the developmental education math and English coursework through the California Acceleration Project (CAP), designed by Katie Hernand Myra Snell (2010). Most recently, 17 colleges are adapting and implementing pilot CAP programs. Rather than recommending strict guidelines, CAP provides principles including:

- Increasing completion of college-level English and math requires shorter developmental pathways and broader access to college-level courses.
- Reduced reliance on high-stakes placement tests.
- Streamlined developmental curricula should reflect three key principles:
  - Backward design entails aligning literacy and math

[13] For a study analyzing the impact of the high school *Puente* Program, see Gandara, 2002, and Gandara and Bial, 2001. For studies examining the community college *Puente* Program, see Laden, 2000, and Rendón, 2002.

instruction with student's educational pathways.

- Just-in-time remediation entails immersing students in challenging, authentic literacy and quantitative tasks and providing targeted reviews of foundational skills at the moment they are relevant to the higher-order work at hand.

- Successful accelerated instruction involves classroom policies and practices that provide intentional support for affective issues to keep these dynamics from derailing students.

Studies find that 52% of students participating in CAP coursework will complete the English developmental education course sequence within three years, compared with 28% of those taking non-accelerated coursework (Hern, 2012). However, of the students testing four levels below transfer-level math, only 9% are completing the requirements within three years, without considering those who repeat courses (Hern, 2012). Therefore, improvements need to move beyond acceleration.

RECOMMENDATIONS FOR FUTURE PRACTICE, POLICY, AND RESEARCH

These ominous statistics emphasize the significant impact that the current state of developmental education has on Latina/o students' opportunities to complete transfer-level coursework. In both English and math, students have better odds of passing transfer-level courses when they begin closer to that goal. Unfortunately, these data point to a major breakdown in the developmental math and English sequences for Latina/o students. Thus, while the concept of developmental education has value, CCCCO data suggest that Latina/o students are not served well by its current implementation and campus support services.

After an extensive search, we found there is a dearth of literature addressing possible effects on Latinas/os' developmental education outcomes. More research is needed, especially related to the impact of various assessments, course sequencings, pedagogy, and student support services. Institutions of higher education must examine critically the process and efficiency of developmental education sequences. Failing to do so supports the continued inequality of Latina/o student success in higher education.

In the meantime, given the urgent need to address the challenges of developmental education facing Latinas/os, we make the following short- and long-term recommendations:

- **Institutionalize measures other than assessment tests to place students in English and math courses.** Although community colleges utilize high school grade point averages and transcripts on a case-by-case basis, this option needs to be offered to all incoming community college students. This might allow for more accurate placement and ensure that all students are placed at the highest levels possible in developmental course sequences. Measures such as prior math background and high school grade point averages have shown to be an effective form of placement in math (see Ngo, Kwon, Melguizo, Prather, Bos, 2013).

- **Collaborate with high school teachers, counselors, and administrators to prepare high school students for community college placement assessments and coursework.** The ultimate goal of placement assessment and developmental education is to ensure that students have strong math and English skills. If K–12 educators have the tools and resources they need to provide students with these skills, students will do better on placement tests and in their coursework overall, ultimately giving them a greater chance at postsecondary success. We see an urgent need for cross-segment collaboration between high school and community college educators.

- **Reduce the length of developmental course sequences by integrating and accelerating courses.** Reducing the number of courses in a sequence reduces the number of exit points in students' educational pathways, thereby decreasing the chances that they will stop out or be pushed out. If students are offered accelerated courses that target specific skill sets, they are more likely and able to remain enrolled, pass the developmental course, and persist to transfer, certificate, or degree (Adams, Miller, & Roberts, 2009;

Edgecombe, 2011; Hern, 2012; Jenkins, Speroni, Belfield, Jaggars & Edgecombe, 2010; Levin, Garcia, & Morgan 2012; Fong & Visher, 2013). Accelerated courses also establish high expectations for students and work under the assumption that students can and will meet curricular requirements (Gutierrez, Morales, & Martinez, 2009).

- **Implement math and English learning communities.** The learning community model involves cohorts of students enrolling in two linked courses together. Oftentimes, learning communities also include thematically linked courses and share curriculum, assignments, and assessments. Learning communities can lead to strengthened relationships among students and faculty and change how the material is taught by contextualizing the course. Students participating in learning communities tend to attempt and pass math developmental education courses at higher rates than those not in learning communities (Weissman, et al., 2011). Moreover, students in learning communities gain academic and social benefits (Engstrom & Tinto, 2008; Tinto, Goodsell-Love, & Russo, 1994; Visher, Wathington, Richburg-Hayes, & Schneider, 2008). The *Puente* program is a successful example of this learning model.

- **Improve community college developmental education classroom instruction.** Existing pedagogy may not be offering students the support required to complete developmental education sequences and related transfer-level courses. Administrators and instructors should reconsider pedagogical strategies, increase classroom support, and reduce class sizes with the goal of making instruction more effective.

  Using the *Puente* program as a guide, mathematics developmental education can benefit from a cross-segment conversation with community college and K–12 colleagues on culturally relevant and responsive mathematics curriculum and pedagogy, ethnomathematics, and social justice math (see Gutstein, 2005; Gutstein and Peterson, 2005; Leonard and Martin, 2013; Martin, 2009a, 2009b; Moses and Cobb, 2001). A culturally-relevant program for mathematics education in the community colleges can integrate the *Puente* program and Levin's (1987) K–12 accelerated schooling model.

  We push for an inclusion of Levin's accelerated model to build on the assets and strengths of Students of Color, their families, and their cultures. Levin (1987) establishes three guiding principles, which we adjust to the community college context: 1) developing a unity of purpose toward supporting the common goal of having all students placed in developmental education complete the appropriate course sequences in a timely manner; this would be the focal point of administrators, instructors, and student support staff members throughout the community college; 2) making sure that primary responsibility and accountability for developmental education decisions and results are delegated to an adequate number of college staff and administrators in conjunction with the students; and 3) building on the unique assets and strengths of Latina/o students, their family, and their culture. We emphasize in particular the integration of the third principle in redesigning developmental education course pedagogies in both math and English. We also extend the third principle to include the communities of the students. Latina/o students have access to a community cultural wealth of capitals that the education system routinely fails to acknowledge and utilize as possible avenues to improve pedagogical approaches (Yosso, 2005).

The data we used in this paper suggest that Latina/o students in California community colleges are struggling to move forward in developmental education English and math courses. Nevertheless, student losses of the magnitude described here point to a considerable leakage in the pipeline for Latina/o community college students. Several deficiencies within the developmental education system must be addressed to ensure broader success for this growing and vital segment of California's population. In the meantime, more funding is urgently needed to increase the number of students that these support programs serve.

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The Policy Evaluation and Research Center (PERC) at Educational Testing Service is pleased to join with AAHHE and UTSA in publishing *PERSPECTIVAS*. Community colleges are the point of entry into postsecondary education for many Hispanic students, so this report, "Examining a Rupture in the Latina/o College Pipeline," is timely, necessary and extraordinarily valuable for learning about the challenges these students face in earning their degrees.

Although focused on California, the data and the description of policies and practices to help Latinas/os through their college coursework have implications for community colleges, educators, policymakers, researchers and others throughout the country. On behalf of ETS, I commend the authors and editors for their valuable work and AAHHE for its dedication toward advancing higher education opportunities for Hispanic students. This aligns with our mission to help advance quality and equity in education for all people worldwide. We also look forward to publishing the 2014 Tomás Rivera Lecture to be delivered at your ninth annual conference.

With best wishes,

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About *PERSPECTIVAS*

PERSPECTIVAS is produced in partnership with the American Association of Hispanics in Higher Education (AAHHE), Educational Testing Service (ETS) and the Center for Research and Policy in Education, The University of Texas at San Antonio. Its purpose is to provide a venue for policy formulation, to highlight best practices and to disseminate cutting-edge research to improve access, retention and graduation of Latina/o students in higher education. The vision of *PERSPECTIVAS* is to be recognized by the P–20 education community as the premier publication addressing research and policy related to Latina/o student success and solutions to improve access, persistence, retention and college completion.

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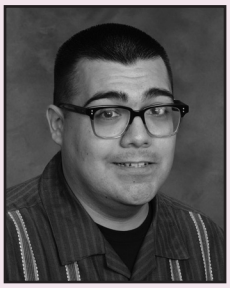

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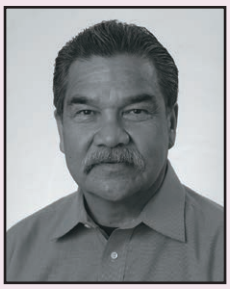

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