Special Issue on Diversity in Higher Education

The 1999 AERA report *The Dynamics of Race in Higher Education: An Examination of the Evidence* (www.aera.net/reports/dynamics. htm) concluded that: "(1) there is clear evidence of continuing inequities in educational opportunity along racial categories; (2) test-based definitions of merit are incomplete; (3) race is a major social psychological factor in the American consciousness and behaviors; and (4) racially diversified environments, when properly utilized, lead to improvements in educational outcomes for all parties." Building on these conclusions, articles in this issue of *ER* report on efforts to create environments in higher education that provide opportunities and produce success for racial and ethnic minority students.

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Shaping Pathways to Higher Education

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This article describes the efforts at the University of California, San Diego to increase campus diversity by developing collaborative school–university partnerships with 18 local elementary and secondary schools in low-income, urban communities. Education research on school reform and sociology of education are drawn from to help examine the process of developing partnerships. This research provides a theoretical lens to study how multiple contexts (e.g., schools, districts, and the university) shape partnership work and the extent to which partnerships succeed in increasing the pool of underrepresented students eligible for the university. Data from fieldnotes, formal and informal interviews, documents, and videotaped presentations and student focus groups are discussed. This approach goes beyond traditional outreach and focuses more broadly on facilitating equity-minded school reform through collaborative school–university partnerships. The data shows that a collaborative partnership model can increase college-going outcomes for underrepresented students and promote equitable change in school structures and climate.

The Dynamics of Race in Higher Education: An Examination of the Evidence (Chang, Witt-Sanders, Jones, & Hakuta, 2000) identifies several "misconceptions" regarding race in higher edu-

cation and recent anti-affirmative action legislation that poses setbacks in college access for underrepresented minorities (URMs). One important misconception is that K–12 schools have sufficiently addressed past inequalities in providing URMs access to college preparatory education. This article attacks this misconception using the circumstances in K–12 schools and the University of California (UC) as a case in point.

Those concerned with improving access to higher education for underrepresented minority students have used a variety of metaphors. Because students take different and often fitful journeys to college and beyond, including stops in community colleges and the workforce (Bowen & Bok, 1998; Cooper, Denner, & Lopez, 1999; Cooper & Gándara, 2001; Gándara, 1995), this article employs a "pathways" metaphor to describe students' journeys through K–16 education. Pathways are preferred to the prevailing "pipeline" metaphor because the pipeline invokes the image of students poured into one end of a seamless conduit and flowing out the other end, thereby implying that college preparation and admissions processes are smooth and highly predictable.

Looking at students' various pathways helps us see that efforts to increase diversity within higher education need to go beyond traditional outreach. Underrepresented students and their families need university outreach representatives to help them navigate the college-going process. But there are also entrenched structural and cultural deterrents in K–12 schools and surrounding communities that shape students' pathways through high school and beyond. Those students who "make it," particularly first-generation college students and underrepresented mi-

norities, are often confronted with a different set of challenges at the university. Examining varied pathways to higher education offer opportunities to engage a range of students, families, and education systems (e.g., K–12, community college, and 4-year college) about increasing URMs' access to and success in college.

After basic information about the sorry plight of diversity in the UC system is presented, the way the University of California, San Diego (UCSD) has engaged in collaborative partnerships with local elementary and secondary schools and community colleges in underrepresented communities is described. This partnership work aims for equity-minded change within these institutions and increased diversity on college campuses. Those associated with A Commitment to Educational Equity and Excellence (CREATE)[1] operate from a shared set of beliefs about educational equity. First, equitable educational outcomes are achieved through an equitable process—one grounded in collaboration and mutual respect. Second, a diverse student body can be achieved by collaborating with K–12 schools to better prepare URMs for college eligibility. Better academic preparation, in turn, implies removing structural and cultural barriers in schools so that all students are highly engaged in classrooms that incorporate students' ethnically and linguistically diverse backgrounds in the curriculum, and where interactions among teachers and students are personalized. An equitable process, leads to equitable outcomes such as (a) increased numbers of URMs eligible for college, (b) increased numbers of URMs in college preparatory courses, (c) higher percentages of eligible URMs admitted to 4-year universities, and (d) improved life chances and options after high school.

Underenrollment: Lack of Recruitment or Lack of Preparation?

The "equity has been solved" misconception is particularly troublesome in California because it assumes an adequate number of URMs are currently eligible for UC admission, and the University's task is a matter of recruitment. However, several reports (Duster et al., 1990; Hurtado, Figueroa, & Garcia, 1996; University of California Office of the President, 1997) conclude that the problem of underenrollment is more a matter of preparation than recruitment. Abysmally few URM students graduate from the state's high schools prepared to attend the university. Large numbers of Latino and African-American youth drop out of high school or complete high school without the courses and grades necessary for UC enrollment. For example, 37% of California's high school graduates are Latino, whereas only 12% of this student population is eligible for the University. African-American students comprise 8% of California's high school graduates, but less than 3% of African-American students are college eligible. Even if the university admitted and enrolled all the currently eligible Latino and African-American high school graduates, the numbers would be still be terribly low. Therefore, the university has to increase the pool of eligible minority students. This realization has led the UC system to work more closely with K–12 educators to prepare more Latino and African-American students for college eligibility. To do so the 10 UC campuses created partnerships with hundreds of K–12 schools across the state, including 75 high schools.

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Constraining Conditions That Shape Inequalities in Higher Education

The 10 UC campuses building partnerships with local schools confront a number of conditions that both constrain and enable efforts, often simultaneously. These enabling and constraining conditions appear in many contexts: local schools, the university, and state government.

The partnership work is constrained by a long history of structural inequality in high minority schools. Academic tracking practices (Oakes, 1985), inadequately trained teachers (Mehan & Grimes, 1999), and absurd student-to-counselor ratios (Paul & Orfield, 1994) are just a few structural constraints that affect the K–12 system's ability to offer minority students quality educational opportunities. Cultural factors such as teacher expectations and race-based assumptions about students, school climate, and students' lowered aspirations also limit minority students' prospects for college (Jones, 2000; MacLeod, 1987; Oakes, Wells, Datnow, & Jones, 1997; Valenzuela, 1998). Political maneuvering by wealthy parents, students, and communities can also impede educational reforms and programs aimed at minority youth (Wells & Serna, 1996). Indeed, structural, cultural, and political impediments often work together to hinder the development and sustainability of equitable K–12 education (Oakes, 1992).

The UC partnership work is also constrained by the actions of state agencies, such as banning affirmative action. In 1995, the University Regents eliminated race- and gender-based affirmative action in UC admissions. The Regents' decision was later extended by Proposition 209, which abolished affirmative action statewide. Effective in Fall 1998, admissions committees on UC campuses could no longer consider race and ethnicity alongside students' completion of UC eligibility requirements.

The decision to eliminate affirmative action debilitated the UC system. The University has always struggled to enroll African-American, Latino, and Native American students. Without affirmative action, already low numbers dropped to devastating levels. In the fall of 1997, the last year of affirmative action, 18.8% of the University's undergraduate students came from URM backgrounds. In the fall of 1999, that percentage dipped to 16.9%. The combination of UC's position in a majority minority state and intense pressure by Latino and African-American legislators, has made UC's inability to enroll larger numbers of non-White and non-Asian minorities an increasingly volatile issue.

The UC system and the schools also grapple with constraints particular to their local circumstances. For example, California K–12 schools are overwhelmingly concerned with the state's new standardized testing system of accountability whereas the UC system is concerned with college admissions. Both wrestle with their historical and public reputations: the UC system as the disinterested, elite institution and the K–12 school system as the dysfunctional, failing institution. University and K–12 educators struggle to create a collective sense of equity and democratic responsibility within institutional contexts that often push for *competitive equity,* in other words, outcomes driven by notions of individual merit.

Other constraints reside in the San Diego historical context. Despite its national reputation as a top-notch research university, UCSD has not had a strong history of supporting San Diego's poorer, minority communities. Throughout its tenure, UCSD had been engaged in various types of outreach activities to K–12 schools and communities, but they were not well coordinated or well funded. Traditional programs of financial aid counseling, parent presentations, summer camps, and classroom presentations were insufficient. The campus's Teacher Education Program, although justifiably celebrated, was small, and therefore touched few schools.

For these reasons, the University's foray into the world of preparing more URMs for higher education is not easy. Yet, working with these constraining conditions, the University and its K–12 partners have managed to create some inroads over the past few years. Next, using the campus as a case in point, the development of UCSD's partnership process is described.

The UCSD Approach to Excellence and Diversity

UCSD responded to the challenge of developing a diverse student body without affirmative action by establishing CREATE in 1997. The purpose of CREATE is to coordinate K–12 outreach for the campus and to develop a theoretical and research-based understanding of how school–university partnerships can increase the pool of college eligible students. CREATE is partnered with 18 San Diego County schools—four high schools, four of their "feeder" middle schools, and 10 of their feeder elementary schools. All of the schools are *low performing,* defined by the state as scoring below 40% on standardized tests, and all serve a majority of low-income students in underrepresented communities. The 18 schools are urban with eight located in the largest district and the other 10 located across three other districts. Collectively, the partnership schools enroll 19,762 students.

CREATE has engaged these elementary and secondary schools in collaborative partnerships. It does not mandate school change; CREATE works cooperatively and respectfully with schools across

a number of areas. For example, research has shown that providing underrepresented students with a variety of academic and social supports is critical for academic success. Links to information-rich networks are important because low-income students often do not have access to information about navigating the college-going process (Brown, Greeno, Lampert, Mehan, & Resnick, 1999; Cooper, Denner, & Lopez, 1999; Epstein, 1992; Lareau, 1989; Oakes, 1985; Stanton-Salazar, 1997; Stanton-Salazar, Vásquez, & Mehan, 2000; Yonezawa, 1997; Yonezawa & Oakes, 1999). With this in mind, CREATE informs parents and students of their rights, and in collaboration with UCSD's Early Academic Outreach Program (EAOP), explains the University's admissions policies and financial aid possibilities. In addition, because students' physical and emotional well-being impacts school attendance and concentration, colleagues in Community Pediatrics within UCSD's School of Medicine provide students and families in partnership schools with a range of prevention-oriented health services (Nader et al., 1996; Nader et al., 1999; Taras, Nader, Swiger, & Fontanessio, 1998).

Intensified teacher preparation efforts are also required to improve the educational experiences of underrepresented students because far too many teachers in low-income schools are poorly prepared academically and struggle to maintain high teaching standards (Darling-Hammond, 1998; Haycock, 1997). In light of these findings, CREATE has implemented on-site professional development for partnership schools to assist teachers in meeting the often draining demands of urban schools, including implementing techniques of instruction that enable previously low achieving students to succeed in rigorous college-preparatory courses.

Studies of educational reform efforts have shown that unless the teacher-student-learning activity is changed, other efforts will not have a significant impact (Elmore, 1996). To improve student achievement, CREATE works with teachers to enrich the learning environment through in-class tutorial assistance and by extending academic instruction to after school, Saturday, and summer sessions. The pedagogical principle guiding this work is to establish high academic standards and provide the necessary academic and social supports to ensure that students meet those standards. When enacted, these are the constitutive actions that, hopefully, lead us to better prepare URMs for higher education.

Structuring and Structured Processes in Post–209 School–University Reform Efforts

At the heart of this article—and CREATE's formation of partnerships—is a discussion of what it means to engage in the structuring and structured process of equity-minded school reform. This notion of shaping and being shaped by surrounding contexts is borrowed from Giddens (1984), Bourdieu (1986; Bourdieu & Wacquant, 1992), and the ethnomethodologists who have long discussed the recursive relationship between individuals and the structures surrounding them. They argue that this recursive relationship sustains, changes, and re-creates structures over time.

Placing CREATE's work in conversation with these concepts has made us aware that the schools and students shape and are shaped by constraints beyond their control, and in ways that too often produce inequitable outcomes for poor and minority students. As we enter their world, we are part of the reflexive contexts within and around them and, consequently, we can better

understand the conditions and possibilities negotiated by these schools and their students. We have also engaged in actions that can disrupt patterns of unequal opportunities and outcomes. Yet, in doing so, we recognize that we, too, have become an entity that both shapes and is shaped by the university, school, and community contexts around us, just as schools and students influence and are influenced by the preexisting cultures and structures that surround their daily lives in schools.

Because CREATE shapes and is shaped by the various contexts around it, the substance of the partnership work takes on multiple dimensions. Oakes (1992; Oakes, Quartz, Ryan, & Lipton, 1999) proposes that equity-minded school change is a multifaceted process with technical, normative (or cultural), and political dimensions. The technical dimension of change includes resources such as laboratories, equipment, curriculum, teachers, and the ways in which students are organized for instruction. The cultural dimension of change refers to values, beliefs, and norms about such super-charged topics as the role of schooling, the nature of intelligence and its distribution across race, ethnicity, class, and gender in schooling practices. Oakes (1992) describes the political dimension of change as the "struggle among individuals for comparative advantage in the distribution of resources, opportunities, and credentials" which often encompass "highly charged issues of race and social class stratification" (p. 13). The political dimension is manifest in daily actions and institutional practices such as the organization of instruction, placement of teachers, and the grouping of students. These technical, cultural, and political dimensions are not only contexts impacting school reform efforts, but also interactive dimensions where equitable actions can occur. Within and across these overlapping dimensions, a particular act can potentially disrupt schooling patterns that disadvantage and marginalize underrepresented students. Therefore, the technical, cultural, and political dimensions of equitable school reform shape the contexts that impact the partnership work, and the partnership (such as professional development) works within these dimensions to shape those contexts in equity-minded ways.

Data Collection and the Role of Researchers

The data in this article come from a number of sources: fieldnotes, formal and informal interviews, documents, and videotapes. Over the past 3 years, fieldnotes were kept of noteworthy encounters at the partnership schools, districts, and University. Fieldnotes and reports, often including K–12 teachers' written reflections, were also gathered from UCSD program providers on activities they conducted with partnership educators and students. University program directors, school personnel, and district administrators were interviewed regarding the partnerships. Documents from partner schools, districts, and UCSD about CREATE, the partnership schools, and their local contexts were gathered. Finally, teacher presentations and student focus groups on teaching and learning at the partner schools (all of which were given pseudonyms) were videotaped.

Although this data collection strategy appears typical of many research projects, this strategy differs in that the researchers are not neutral observers but active participants. CREATE's role is to help document and shape the interactions between UCSD and the K–12 system. This requires a more sophisticated research

position that rejects the objectivism of Cartesian science and aims for a more emancipatory social research agenda (Hamilton, 1994). CREATE's objective is to increase equity at the partnership schools and specifically to improve low-income and minority students' college-going opportunities. This, therefore, forces the rejection of the notion of the passive researcher and adoption of a reflexive research position (Emerson, 2001). The stance as action researchers is more comfortable than traditional roles because the positions we occupy as individuals in the social hierarchy—three women of color, an African American, Japanese American, and Mexican American, and a White man who still recalls his working-class roots—remind the authors what they "know" about the world around them is inherently influenced by individual biographies (Collins, 1990).

Regarding bias, as we began this work, we worried about the extent to which we could be intimately involved in the partnerships while studying them. Our concerns mirrored those that have been voiced by qualitative researchers and feminist scholars for several decades (Olesen, 1994). One technique we used to examine our bias was meeting weekly to pour over fieldnotes and to use our conversations and memo writing to engage in a reflexive process as we examined the data, and, more importantly, our relationship to the data and our role in generating it. These meetings were essential, as they provided a better understanding of our interpretations of the data and how our interpretations influence future actions.

Working Within Nested Dimensions of School Change

Next we describe some ways in which the university, school, and community contexts both shape and are shaped by the formation of our collaborative partnership model to prepare more students for higher education. We discuss the ways in which providing technical resources and assistance helped us gain entry into our partnership schools and created a space to begin a dialogue about school change. This initial trust building laid the groundwork for subsequent conversations and actions around school culture and district and state politics. Our progression from the technical to the cultural and political dimensions was not linear. The overlap and fluidity of these dimensions are like layers of an onion that were sometimes difficult to peel back; the partnership began with the surface, technical resources, and then gently peeled back the contextual layers surrounding our partnership schools as we moved to the cultural and political core of school reform. We did not remove or discard the technical layer as we made this move. On the contrary, because the partnership work emerged from the iterative process of building relationships with K–12 educators (Yonezawa, Jones, & Mehan, in press), our actions constantly moved back and forth within and among the technical, cultural, and political dimensions. However, our actions were impacted by the contexts surrounding our work, which forced us to move out of a dimension, for example, because of the demands of district policies.

Building Trust Through Technical Resources

The first 2 years in the formation of our collaborative approach to partnerships primarily involved establishing trusting relationships with our colleagues in partnership schools. Because of UCSD's un-

even history of engaging underserved schools, we had to convince local educators of our commitment to them. Establishing trusting and supportive relationships with schools is vital for the success of any school–university partnership. This is even more important with schools serving predominantly underperforming and underrepresented student populations because these schools often face complex problems with uneven guidance or support from their districts or school boards.

The technical resources often acted as an entry point in the process of establishing collaborative partnerships. We offered tutoring programs, after-school computer clubs, professional development opportunities, and college counseling, for example, to establish our good intentions and demonstrate our long-term commitment. At Southtown High School, for instance, we provided many tutors, a bus for a college tour, and funded departmental professional development in literacy, mathematics, and science.

The exchange of technical capital for trust is vitally important for the development of underserved schools (Yonezawa, et al., in press). But technical improvements alone do not define the extent of our partnerships. We see the establishment of trust as we fulfill promises to make resources available to schools as a first step in a complex process that leads to deeper changes within schools.

Proving to K–12 educators that UCSD values authentic collaboration around school reform required our initial actions to be technical. By fulfilling teachers' requests for in-class assistance, teacher-driven professional development, or after-school academic programs, we could show UCSD's commitment to meeting educators' needs. More importantly, fulfilling technical demands opened important windows of opportunity to discuss structural, cultural, and political constraints that restrict underrepresented students' access to high quality educational opportunities. Once the partnership schools saw that we genuinely wanted to co-construct support for educators and students, CREATE and the schools could negotiate what other kinds of equitable actions might improve the educational experiences and opportunities for URM students in higher education.

Moving Deeper Into Cultural and Political Dimensions

CREATE's interactions with the science department at one partnership high school helped us understand how constraining contexts can shape equity-driven school–university partnerships and how contexts can also be re-shaped by the partnership effort. This example highlights how actions within the cultural dimension of school change can impact teachers' classroom practices so that more students are prepared to go to college. This example, like others in this article, reveals the flowing and overlapping nature of the technical, cultural, and political dimensions of change. But we have chosen to accentuate one dimension in each example to explicate the ways in which structured and structuring processes impact equity-driven school reform in our school–university partnerships.

When the partnership between UCSD and Southtown High School began, the district was implementing a comprehensive literacy reform across K–12 schools. As a result, funding sources, professional development, and administrative leadership had been re-focused on literacy to the exclusion of science. Consequently, the district lost its Urban Systemic Initiative (USI)

funding, a major science grant. For the science department at Southtown High, the district's reform orientation and loss of USI funding had a significant impact.

Before USI support, the department was fragmented, and teachers typically worked in isolation. The department chair worked hard to construct a professional and collegial culture in the department during department meetings. But these 35-minute lunchtime meetings were too short to discuss anything other than department business. USI funding encouraged the department chair and a few other science teachers to think creatively about improving science classrooms and student success and building a cohesive department. With USI funding, the teachers decided that they would observe one another's classrooms and meet once a month after school to discuss their observations and share lessons and teaching strategies. The district context strongly impacted the department with the unexpected removal of USI funds because, just as the department was becoming more collegial, the funding disappeared. To their disappointment, the science teachers' professional development was brought to a halt, and, as a result, teachers returned to working in isolation.

The Southtown science department approached CREATE for support to resume meeting about course articulation, peer observations, curriculum, and instruction. In the department's 1999 proposal to CREATE, they wrote, "when USI was lost, we lost our funding to meet. At the CREATE brainstorming session we realized that both the collaborative meeting time as well as the classroom observations were truly missed. The ultimate goal is to improve our abilities to increase [the] success of all our students in all our science classes." CREATE helped reshape the department's culture by funding their teacher-driven professional development so that science classrooms could better prepare students for college. Moreover, because CREATE is invested in sustaining relationships with partnership schools for as long as possible, teachers do not have to worry that CREATE will withdraw its support.

The science teachers had significant ownership over their professional development. Although CREATE has specific funding guidelines and program goals, it is explicit about treating teachers as professionals. CREATE does not impose mandates about content or instruction. Teachers in partnership schools are encouraged to think innovatively about how to improve teaching and learning and, ultimately, help more students meet university eligibility requirements. CREATE communicated those beliefs to the science department, as well as the belief that creating spaces in which teachers can meet as colleagues allows them to share expertise and learn from one another.

The science department has met monthly for 2 years. In their written reflections to CREATE, every teacher except one expressed how much he or she appreciated the monthly professional development time and that the meetings helped them improve their classroom practice. One teacher said, "[The meetings] gave me the opportunity to clue in on the things I need to address and improve in my classrooms." Another teacher improved his curricula. He wrote, "[A] benefit of these meetings is new ideas from other teachers' curriculum. I have found [these meetings] to be one of the best ways of evaluating [and] upgrading my own curriculum." The freedom they had to construct their professional growth helped change the department culture to work collectively

on making instruction more rigorous and college preparatory. Their reflections included statements such as, "Our department became more cohesive, and we all began working collaboratively," and "These meetings are strengthening the teacher community in the science department. The meetings and observations begin to allow us to build on the experience, expertise, and talent that is already here in the science faculty."

CREATE certainly helped re-shape the department's culture by supporting its professional development, but the teachers' actions pushed them toward cohesiveness, collaboration, and improved teaching and learning. For now, the days of fragmentation and isolation seem to be over, and the changed departmental context has opened up space for new ideas and programs. The department started a Science and Technology Academy, which allows students to study the relationship between scientific investigation, inquiry, and technology (advances in medicine for example). Moreover, the Science and Technology Academy provides underrepresented students the opportunity to engage in hands-on experiences in science careers that can encourage students to pursue higher education.

In this example, the district reform context impacted the science department's professional meetings and their efforts to build a collegial department culture and rigorous classrooms. CREATE helped to re-shape the department culture by supporting its teacher-driven professional development. By collaborating with the science teachers, the department culture changed, teachers felt their classroom practices improved, and a new Academy was created offering all students academically enriching opportunities leading to college eligibility.

The previous example accentuates the relationship between the technical and cultural dimensions, highlighting the cultural. The following example, which discusses the inclusion of student voices in school reform, shows how the cultural and political dimensions interact. After a year of providing technical support, such as after-school tutoring programs and teacher-driven professional development around curriculum units, to Churchill High School (CHS), CREATE felt the partnership was ready to begin tackling some tough cultural issues. During Year 2 (1999–2000) of the CHS partnership, a new principal arrived who focused on raising achievement standards in CHS's classrooms and in the minds of his teachers. The new principal was immensely concerned about the "can't-do" culture that persisted among many CHS teachers and the low expectations teachers had for many students, particularly the school's minority youth.

The improved relations between the university and the school community, and the infusion of new school leadership, had shifted the context enough to allow for different kinds of partnership actions. One example was the formation of student inquiry groups tackling the negative beliefs many CHS educators had about their URM students' post-secondary options. Developed and facilitated by the partnership coordinators and supported by the principal, CREATE and CHS ran two student inquiry groups for most of the year. These student groups, which were made up of 9th- through 12th-graders of mixed ethnic, racial, socioeconomic, and past achievement backgrounds, discussed their experiences in CHS classes and at the school. The students engaged in dialogue about relationships with teachers and peers, frustra-

tions and satisfactions with learning at CHS, teachers' pedagogy and curriculum, and the school's culture and structures related to learning and identity. The 8 to 10 students per group participated regularly during the year and agreed to be videotaped. Students who participated in the groups knew that their discussions would be shared with the CHS teachers. At the beginning of the 2000–2001 school year, the students, principal, and partnership coordinators decided to share the inquiry groups' data via a whole-faculty presentation on the first day the faculty returned from summer break.

The morning of the presentation the teachers congregated in the cafeteria. One partnership coordinator, who had been working with CHS for 2 years, recalled her feelings:

> I was, admittedly, afraid of what I was launching into with this presentation. When I first entered the cafeteria that morning to set up my projector, I was greeted in a very friendly way by many of the teachers who I knew from work past. People seemed genuinely happy to see me. I felt guilty, like I was betraying their trust in me. At the same time, I was determined that this step in the partnership had to be taken. We needed to start speaking more honestly with teachers about the things that concerned us about the school, the same things that concerned students about the school, and specifically about the classrooms at the school.

The principal emphasized to the teachers the importance of the inquiry groups. Then, the partnership coordinators and three inquiry group students presented data themes: students' perceptions of teachers' expectations, teacher–student relationships, frustration with the pace and rigor of the curriculum, teacher assumptions, and views on homework and pedagogy. During the 75-minute presentation, teachers heard students' word-for-word comments about their lives in CHS classes.

Example 1: With the mathematics teacher we have, it's like 14 steps to do one problem, and you have 24. The mathematics teacher we have be tripping sometimes. I just think he doesn't like teaching anymore. Ever since his car got stolen out in front of the school, he's been in a bad mood. He's been like, "Forget this! I don't want to teach anymore, I don't even know if I'm coming back." . . . If you don't want to teach you should have left a long time ago. Don't take it out on us. We're not your guinea pigs.

Example 2: Student 1: I have a teacher right now in science. And I feel he is a really good teacher because he makes learning fun . . . He has a high standard for everyone in the classroom, and he doesn't take less than that.

Student 2: I got that class too. He's really good because he's not just talking to the whole class. He'll talk straight to you. Even if you're all the way in the corner. He'll talk to you.

During the presentation, students expressed their frustration about classrooms in which they did not understand what was asked of them, and where they felt unfairly treated because of the speed at which they learned. They also conveyed their apprecia-

tion for classes where they were treated fairly, held to a high academic standard, and knew someone cared about them. Furthermore, they discussed how offended they were when teachers made assumptions about them based on race, ethnicity, language, or culture. The faculty appeared riveted during the presentation. Teachers' reactions varied, but many said the information was interesting and useful. A few said the presentation made them reflect on past interactions with students. The presentation marked a significant change in the focus of the partnership from the technical dimension to include and even highlight the cultural dimension—a focus that addressed the values of those within the CHS community (for more on student voice in school reform see Jones & Yonezawa, in press).

Two months later, the CHS principal (who had just entered his 2nd year at the school) was promoted to supervise half of the district's high schools, and he recruited CHS's mathematics department chair to be the district's high school grants coordinator. Their new jobs were to promote and support district high school reform. They found early on, however, that many of the high school principals failed to see the need for change. As the former mathematics department chair explained, "How do you get the principals to understand that their most important job is instruction and the needs of their individual students?" Recalling the work at CHS, they saw the inquiry group data as potentially helpful because of its ability to "bring home" the "urgency" of the problem. Unlike statistical data that principals "looked at all the time," the inquiry data could evoke "powerful" emotions and "move people personally and professionally." The district's planning team then decided to invite the partnership coordinators to give a student inquiry presentation that would launch a 2-day High School Principals' Retreat. The presentation would "set the tone" and emphasize the need for academic press, personalization, and school leadership in the high schools. At the presentation, the partnership coordinators also emphasized the usefulness of student voice to shift the school culture as part of reform. By inviting student voice into the high school principals' retreat, the district had appropriated the partnership work at CHS to shift the culture among the high school leaders about the need for more rigorous academic instruction and high expectations for all students.

In the final section, another example of how a technical resource can activate both the cultural and political dimensions of change is discussed. The example concerns the ways our efforts to improve elementary mathematics curriculum and teaching were impacted by district contexts and, in turn, how our efforts to work within these multiple dimensions also influenced district actions. This example is important because of the debate over elementary mathematics curriculum (Rosen, 2000). Research, our colleagues, and partnership middle school teachers assert that worksheet-based mathematics curriculum does little to prepare elementary students for college-preparatory mathematics in middle school and high school (Stein, Silver, & Smith, 1998).

A CREATE professional development specialist in elementary mathematics provides elementary teachers professional support emphasizing curriculum that teaches mathematics through hands-on, real-world experiences. Her work with teachers shifts depending on teachers' needs, varying from in-class demonstra-

tion lessons and whole faculty workshops to helping grade level groups align curriculum to state standards. She began by working in three partnership elementary schools in the Central City School District and then, because her work was well received, quickly shifted to all 10 elementary schools in the Central City School District. Because the district valued her work, she was asked to assist the district in the textbook adoption process. She saw her role in the district's textbook adoption as a strong advocate for *Everyday Math*, which is an inquiry-based, hands-on curriculum. Consequently, when she advocated strongly for one program, she lost sight of her role as a district consultant. As a result, when dissenting teachers complained to the district that she was overstepping her role as a "consultant," the district responded by asking her to step aside while they decided what action to take.

The elementary mathematics professional development specialist learned from the Central City process that she could not help schools by being a strong advocate for any particular curriculum or publisher; therefore, her plan of action changed when she accepted the Ocean City School District's invitation to help in its textbook adoption process. In the traditional mode of adopting textbooks, teachers are typically asked to pilot all available textbooks, which usually leads them to become attached to mathematics materials from particular publishers that they are familiar with and comfortable using, but not necessarily best for students. She encouraged the Ocean City district to try something new: teachers using lessons from anonymous textbooks and discussing evidence about the way each lesson does or does not meet teacher-determined criteria about what's best for students. She believed this process would inevitably lead teachers to choose a curriculum that was more inquiry-based because she assumed that teachers in a high minority district would realize that inquiry-based learning was the best approach to improving URM students' learning and achievement in mathematics. Unfortunately, however, there was a glitch and the district reverted to its traditional method of choosing curriculum by accidentally sending teachers all available textbooks for piloting, thereby allowing teachers to choose materials they felt most comfortable using in their classrooms. As of this writing, a final decision in both districts is pending.

CREATE has tried to improve elementary curriculum by hiring a professional development specialist in elementary mathematics to help elementary teachers enhance their mathematics knowledge and instruction so that underrepresented students are prepared for college-prep mathematics courses in secondary school. These events show that such efforts have been hampered by district politics. There is a history of predominantly low-income, minority schools treating mathematics learning as procedural and formulaic and, subsequently, the learning and performance of underrepresented students suffer. As the mathematics specialist helps teachers deepen their mathematics content and pedagogy, she runs up against teachers' assumptions about the capability of URMs to succeed in mathematics. The act of engaging elementary teachers to think in new ways about what constitutes college-prep mathematics curriculum for underrepresented students is not a simple technical matter; it is infused with cultural beliefs about race and ability and hobbled by district political constraints.

Conclusion

At UCSD, CREATE's work with our K–12 colleagues tries to re-shape the contexts that circumscribe our reform efforts so that students, particularly poor and URM students, have access to more post-secondary options. The partnership work is beginning to show improved outcomes for increasing college access. Turning attention to our four partnership high schools, 66 URM students were eligible for the UC in 1998–1999, and 89 were eligible in 1999–2000. These are pathetically small numbers, but changes in the climate within our partnership schools toward academic preparation for college suggest that trends are going in the right direction. Two of our partnership high schools have eliminated all mathematics and science courses that do not satisfy university admissions requirements. The number of sections of Beginning Algebra (a well-known "gate-keeping" course) has increased from 51 to 73, and the enrollment in these courses has increased from 1,343 in 1998–1999 to 2,065 in 1999–2000. More students are also completing the course sequence required for entry into the California State University system and the UC system; whereas 23% of graduating seniors completed course requirements in 1998–1999, this percentage increased to 27% in 1999–2000. This increase is partly due to the expansion of partner high schools' Advanced Placement (AP) course offerings (from 33 to 35) during this same 2-year period. Subsequently, more students enrolled in these courses (from 956 to 1,017). Higher numbers of students also took AP tests (from 633 to 640) and passed AP tests with a score of 3 or higher (from 403 to 492). At one of these schools, the number of students taking AP tests doubled (from 261 in 2000 to 505 in 2001) and the number of students passing the exams almost tripled (from 107 in 2000 to 307 in 2001).

The partnership work statewide is beginning to pay off in tangible terms. In 1997, the year before the Regents' decision and Proposition 209 eliminated the use of race, ethnicity, and gender in admissions decisions, 18.8% of the incoming freshmen on the 10 UC campuses were from URM backgrounds. In the fall of 1999, this percentage dipped to 16.9%. By the fall of 2001, this figure increased to 18.6%. To some this implies that school–university partnerships are doing their job—at least returning the University to its previous levels. However, URM students are not evenly distributed through the system; 17.1% of incoming freshmen at Berkeley, 15.8% at UCLA, and 11.5% at UCSD—the three most competitive campuses—are URMs, whereas 25.3% of incoming freshmen at Riverside and 18.7% at Santa Cruz—the two least competitive campuses—are URMs.

We would like to comment on the relevance of our case study for other institutions of higher education attempting to maintain or increase diversity on their campuses. Certainly student-based outreach efforts that focus mainly on providing students with information about college preparation and the admissions process should be sustained. In the UC system, these programs include EAOP, Puente, and MESA. EAOP provides a variety of important motivational and informational activities to secondary students, including counseling students to take college-prep classes and college entrance exams. Puente and MESA are academic programs for students of color; MESA, in particular, provides academic support for students interested in mathematics, science, and engineering—areas where minorities are significantly underrepresented (Gándara & Bial, 2001). Although providing students with motivational information, college counseling, and academic support may be necessary for shaping pathways to higher education, it is not sufficient. Relying on students to remove hidden institutional obstacles places too much of the burden on individuals who may already be disadvantaged by their position within the K–16 system.

We recognize the constraining conditions within which we work; however, we also recognize that through negotiation we can, at times, engage schools and districts in ways that can re-shape the structures and cultures that surround our efforts to increase college access for underrepresented students. Cultural and structural changes in K–12 schools are needed to smooth pathways to higher education. The cultural changes we envision include cultivating new beliefs about the basis of school achievement (e.g., that talent is not distributed by race, class, and gender and that access to a college-prep education should not be reserved for a precious few). The structural changes we envision include facilitating wider access to college-prep classes and preparing teachers to teach rigorous material to students from diverse cultural, linguistic, and socioeconomic backgrounds.

Changes need to be made in universities as well. University admission is a zero-sum game, with only a limited number of seats for students. Limited enrollments will constrain outreach efforts if they are actually successful, that is, if more and more students become eligible for the university. Ironically, many students recruited through outreach would be turned away because of an upper limit on enrollments, an increasingly larger pool of qualified applicants, and increasingly stiff competition from other students. Therefore, universities would be well advised to closely examine their current admissions policies to avoid that trap.

School–university partnerships are not the only way to shape pathways to higher education. Even a partnership built on collaboration and mutual goals struggles to disrupt the systematic reproduction of educational inequality and make schools socially just. Yet we have learned that authentic collaboration around what counts as equitable and democratic education helps us understand the complex ways school, district, and state contexts constrain and enable college access. A better understanding about constraining and enabling contexts can help the University and its K–12 partners act in ways that subvert constraints and support minority students' varied pathways to the university.

NOTE

[1] See, http://create.ucsd.edu

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