Multiple Perspectives on Multiple Pathways

Preparing California's Youth for College, Career, and Civic Responsibility

Restructuring and Reculturing Schools to Provide Students with Multiple Pathways to College and Career

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The conventional way in which high schools are organized holds instructional time constant and varies the curriculum offered to students. Integral to these organizational arrangements is tracking (sometimes called curriculum differentiation). That is, some students are placed in high-track classes in which they receive instruction in courses that are intended to propel them toward college. This instruction is most often text-based and demands written and verbal displays of knowledge. Other students are placed in fewer and less demanding "low-track" academic courses, which are often supplemented by "voc ed" classes in which students receive instruction that aims them toward the world of work after high school. Instruction in voc ed courses is often "hands-on" and allows students to demonstrate the knowledge they acquired in many modalities, including exhibitions and models.

The prevailing way of conceptualizing multiple pathways to college and career retains attempts to blend this distinction between college prep and voc ed curriculum, providing "multiple pathways" to the same destination: success in college and career, not one or the other. In this paper, I discuss one strategy to implement high school reform through multiple pathways—by uniting the academic demands of college prep courses with the hands-on experiences of voc ed courses. I begin the paper by examining conventional ways of grouping students and then provide a critique of tracking practices. The paper then explores a multiple pathways strategy as an alternative to tracking and uses the Preuss Charter School located in San Diego as an example of a multiple

pathways strategy wherein all students are prepared for college and career after high school graduation. The Preuss School demonstrates that detracking goes beyond just technical or structural changes, but involves a cultural change in teachers' beliefs, attitudes, and values, changes in the curriculum and the organization of instruction. This shift can provide all students with access to a full range of postsecondary options.

Conventional Ways of Grouping Students

Historically, educators in the United States have responded to differences among individuals and groups by separating students and exposing them to different curricula. Since the 1920s, most high schools have offered a "tracked" curriculum--sequences of academic classes that range from slow-paced remedial courses to rigorous academic ones. Tracking starts as early as elementary school. Students who are perceived to have similar skills are placed in small working groups, often called "ability groups," for the purposes of instruction. Students who have less measured ability are placed in low-ability groups. Students with greater amounts of measured ability are placed into high-ability groups. The curriculum in low-ability groups is reduced in scope, content, and pace relative to high-ability group classes. Often an informal arrangement in elementary school, tracking becomes institutionalized in middle schools and high schools. Students who have been assigned to the "college prep" track receive a distinct curriculum and are separated from students who have been assigned to the "vocational" track.

Tracking was justified at the height of industrialization because it supported an emerging long-standing belief in the United States and Great Britain that a crucial function of schools was to prepare students for jobs:

Our schools, are in a sense, factories, in which raw products (children) are to be shaped and fashioned into products to meet the demands of life. The specifications for manufacturing came from the demands of 20th century civilization, and it is the business of the school to build its pupils according to the specifications laid down (Cubberly, 1916: 338).

Industrial leaders who adopted a factory model of production divided labor into jobs and occupations that required different kinds of skills. As a result, workers who had different kinds of knowledge were needed to fill those different kinds of jobs. The school was to serve as a rational sorting device as well as provide training, matching students' talents to the demands of the workplace (Turner, 1960). Thus, rigorous academic classes could prepare students heading for jobs that require college degrees, whereas vocational programs could prepare students for less skilled jobs or for technical training after high school.

Tracking students for different work lives was thought to be fair because students were thought to possess different intellectual abilities, motivations, and aspirations that could be matched to jobs that required different skills and talents. Thus, a tracked curriculum with its ability-grouped classes was viewed as both functional and democratic. Tracking was functional because it matched students to the appropriate slots in the workforce, thereby providing the nation with the range of workers it needed. Tracking was democratic because schools presumably sorted students based on their talent, effort, and hard work, thereby providing students with the education that best met their abilities (Davis & Moore, 1945; Parsons, 1959; Turner, 1960).

Critiques of Tracking

Research and public commentary have shown that the schools' practice of tracking does not fulfill either of its promises. It neither provides students with equal educational opportunities nor serves the needs of employers for a well-educated, albeit compliant, workforce. Students from low-income and ethnic or linguistic minority backgrounds are disproportionately represented in low-track classes and they seldom move up to high-track classes. Students placed in low-track classes seldom receive the educational resources that are equivalent to students who are placed in high-track classes. They often suffer the stigmatizing consequences of negative labeling. And, they are not prepared well for the workplace.

Accounts of the *differential distribution* of students to ability groups and tracks have been summarized comprehensively by Oakes (1985 [2005]; Oakes, et al. (1992), and Lucas (1999). The distribution of students to high-, middle-, and low-ability groups, or academic and general tracks, seems to be related to ethnicity and socioeconomic status. Children from low-income or one-parent households, or from families with an unemployed worker, or from linguistic and ethnic minority groups, are more likely to be assigned to low-ability groups or tracks. Furthermore, ethnic and linguistic minority students are consistently underrepresented in programs for the "gifted and talented."

Schools serving predominantly poor and minority students offer fewer advanced and more remedial courses in academic subjects than schools serving more affluent and majority students. Even in comprehensive high schools that bring students from different backgrounds together under one roof, researchers have found a strong relationship between socioeconomic background, ethnicity, and educational opportunity. The

relationships are both simple and direct. The greater the percentage of minorities, the larger the low-track program; the poorer the students, the less rigorous the college prep program. Moreover, as college aspirations increase, the college track itself is increasingly subdivided into multiple tracks—with the most advantaged students typically found in tracks consisting of Advanced Placement classes and honors sections of college preparatory classes. (Oakes, 1985 [2005];Oakes et al., 1992; Lucas, 1999).

Researchers also report *differential treatment* of students once they have been placed in different tracks (Cicourel & Mehan, 1983). Within elementary school classrooms, ability groups are taught by the same teacher, but students in different groups do not receive the same instruction. For example, low-ability groups are taught less frequently, and are subjected to more control by the teacher. High-ability groups progress farther in the curriculum over the course of a school year, and this advantage accumulates over time. As a result, students with a sustained membership in high-ability groups are likely to have covered considerably more material by the end of elementary school. Differential treatment of students in different tracks continues in secondary schools: low-track classes consistently offer less exposure to less demanding topics whereas high-track classes typically include more complex material. Lower-track students take fewer math and science courses, and these courses are less demanding. In comparison, students in the academic track take three to five times as many advanced courses in math and science (Haycock, 2006) and more honors and advanced courses. Students in nonacademic tracks take more courses in the arts and vocational subjects because they have more room in their schedule for elective courses. College-bound students take significantly fewer vocational courses than non college-bound students (Oakes et al., 1992).

In addition to being subjected to differential access to curriculum and instruction, students in different tracks get different kinds of teachers. Some schools and school districts allow teachers to choose their teaching assignments based on seniority, whereas other schools and districts rotate the teaching of low- and high-ability classes among teachers. In either case, it is not uncommon for class assignments to be used as a reward for teachers judged to be more powerful or successful and as a sanction against teachers judged to be weaker or undeserving. Many teachers covet high-track classes because they find students in these classes more willing to participate in academic work and they pose fewer disciplinary problems. Whether schools assign teachers or teachers choose their assignments, students in low-income and minority neighborhoods are more likely to get less experienced teachers than students in more affluent neighborhoods. For example, teachers of low-track classes at the secondary level in math and science are consistently less experienced, are less likely to be certified in math or science, hold fewer degrees in these subjects, have less training in the use of computers, and are less likely to think of themselves as master teachers (Haycock, 2006). A vicious cycle for low-tracks is the result. Repeated assignment to the bottom of the school's status hierarchy may demoralize teachers, reducing their competency, which in turn may give students who have the greatest need for the best teachers the least qualified teachers.

Perhaps the most severe criticism of tracking is that it takes on a caste-like character. Once students are placed into low-ability groups, they seldom are promoted to high groups. Students placed in low-ability groups in elementary school are more likely to be placed in general and vocational tracks in high school, whereas students placed in high-ability groups in elementary school are more likely to be placed in college prep

tracks in high school. Placement in vocational and nonacademic classes can trap ethnic

and linguistic minority students despite their achievements in school. Tracking has

distorted Horace Mann's vision for the "common school"–an institution that was

intended to educate students from all sectors of society—rich and poor students, children

of new immigrants, and children of established families.

Tracking practices have also distorted John Dewey's (1900, 1902 [1956])

progressive approach to pedagogy that is often invoked to support working with and

learning from workplace tools. It is true that Dewey suggested the use of tools, like the

printing press and the weaving loom, and recommended that students till the earth as

gardeners. But there is an important difference. These vocational related experiences

were carefully designed as springboards for all children to jump into central intellectual

quests of literacy, problem solving and science. Dewey insisted that *all* students be

instructed with techniques that enable students to manipulate their environment, make

real-world connections, and communicate the results of their investigations in multiple

modalities.

Unfortunately, Dewey's ideas were never institutionalized. Instead, educational

reformers—ironically often invoking Dewey—relegated hands-on, real-world education

as a terminal experience for students who were not believed to have the capacity for

symbolic thought, and reformers reserved text-based, literacy-based education for

students aimed for college. In the late 19th century, vocational schools with agricultural

and mechanical programs provided a practical reason for new Irish immigrant children

and rural students to attend public school (Rosenstock & Steinberg, 1995). The Smith-

Hughes Act of 1917, which began the federal support for vocational education, cemented

the distinction between liberal arts and vocational education. Voc ed became a separate, second-class system under separate control. Dewey saw the segregated vocational education favored by business as a "form of class education which would make the schools a more efficient agency for the reproduction of an undemocratic society" (quoted in Rosenstock & Steinberg, 1995). In sum, tracking practices have branded vocational education as a set of courses deemed more appropriate for low-achieving students—students who are not expected to be successful in an academic track or proceed to college.

Research (Cicourel & Mehan, 1983; Oakes 1985 [2005]; Oakes et al 1992; Lucas, 1999; Hallinan, 2004) has shown that the schools' practice of tracking neither provides students with equal educational opportunities nor serves the needs of employers for a well-educated workforce. Students from low-income and ethnic or linguistic minority backgrounds are disproportionately represented in low-track classes and vocational education and seldom receive the educational resources that are equivalent to students who are placed in high-track classes. They often suffer the stigmatizing consequences of negative labeling. They are not prepared well for careers or college.

In a word, then, tracking is undemocratic. Although originally justified because schools presumably sorted students on the basis of achievement and not ascription, tracking has carried a racial, ethnic, and social class bias from its inception. At the turn of the past century, low-level academics and vocational training were thought to be more appropriate for immigrant, low-income, and minority youth, whereas rigorous academic preparation was seen as better meeting the needs of more affluent whites. At the turn of this century, proponents said that tracking was necessary because many students,

especially those from low-income linguistic and ethnic minority backgrounds, come to

school ill prepared for rigorous academic work and would be better served by a program

that prepares them for jobs as soon as they finish high school. But when students are

tracked on the basis of class, race and ethnicity, they are denied equal access to

educational and occupational opportunity.

Not only is tracking undemocratic, it is not functional. It has not accomplished its

job of matching the talent of the students with the demands of the workplace. Starting

with the critique of American schools contained in *A Nation at Risk*, a steady stream of

employers, policy makers, national opinion leaders, and educators have expressed

dissatisfaction with students' knowledge, skills and attitudes. Echoing the comments

made by business leaders since the 1980s,[1] ACT (2006: 2) asserted:

> The primary mission of our public educational system is to give every student the
> opportunity to live a meaningful and productive life, which includes earning a
> wage sufficient to support a small family. All students need to develop the
> knowledge and skills that will give them real options after high school. No
> student's choices should be limited by a system than can sometimes appear to
> have different goals for different groups. Educating some students to a lesser
> standard than others narrows their options to jobs that in today's economy no
> longer pay well enough to support a family of four.

As the comments from this commission report show, changes in the nature of work itself

contribute to dissatisfaction with the present tracking system. Increasingly, the

organization of work has shifted from manufacturing and industrial to service and skilled

technology. These jobs require workers to think their way through unfamiliar problems,

be more literate, and be able to use sophisticated computers and other technologies.

Workers in skilled technology jobs must interpret, compare, and analyze all manner of

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[1] For example, the Carnegie Council on Adolescent Development, (1989), the U. S. Department of Labor's
Secretary's Commission on Achieving Necessary Skills, (1992), and the Commission on the Skills of the
American Workforce, (1990).

printed information, including graphs, charts, and tables (ACT, 2006). However, as

pointed out by Murnane & Levy (2004), even though computers are driving long-term

change in the job market and in the skills the job market now demands, the right kind of

education creates the essential skills for success in future job markets. This education

consists of teaching problem-solving skills and the ability to convey a particular

interpretation of information—skills needed in fields beyond technology-driven jobs

including blue-collar jobs. Literacy and math are critical skills necessary to acquire the

knowledge to be a problem solver in any field. Hence, whether a student is planning on

entering the workforce or college immediately after high school graduation, all students

need to be educated to a comparable level of readiness in reading and mathematics—

anything less will not provide graduates the foundation of academic skills needed to learn

additional skills as their jobs change or as they change jobs (ACT, 2006).

Multiple Pathways as an Alternative to Tracking

Recognizing that tracked schools are both inequitable and ineffective, educators

have been exploring alternatives to tracking practices since the 1980s. This paper focuses

on one attempt to redefine and restructure the academic curriculum, pedagogy, and

course structures of California schools into "multiple pathways" to college and career. I

report on the Preuss School on the UCSD campus that has reversed the conventional

time-curriculum relationship that I mentioned above. That is, the educators at the Preuss

School have established high instructional standards and present rigorous curriculum to

all students, while at the same time, they vary the supports available to students to enable

all students to meet high academic standards. Often called "detracking," (Wheelock,

1992; Rubin, 2006) this strategy offers a rigorous academic curriculum to all students accompanied by an extensive system of academic and social supports, or "scaffolds."

Detracking high schools can provide students with access to multiple pathways toward high school completion and beyond. By experiencing a rigorous academic curriculum, they are well prepared for both college and career. This approach requires a school district to assemble a portfolio of schools, each with a different theme or focus (such as performing arts, science academies, interactive technology, etc.). When a district assembles a portfolio of theme-based schools, each of them rigorous, then students (and their parents) can choose from an array of high-value possibilities.

I should note that this form of curriculum differentiation doesn't equate with tracking. Indeed the entire point of constructing multiple pathways to educational opportunities is to differentiate the *means* to achieve a common *end*—students graduating from high school prepared for college and careers. Also important is that effective detracking is not just a technical or structural change in the academic plan or school calendar. As I will illustrate below, it also involves a cultural change in teachers' beliefs, attitudes, and values as well as changes in curriculum and the organization of instruction.

The Preuss School at UCSD

The Preuss School is a single-track, college-preparatory public charter school on the campus of the University of California, San Diego (UCSD) serving students from low-income backgrounds whose parents or guardians have not graduated from a four-year college or university. Developed in the aftermath of the elimination of affirmative action admissions policies in the University of California (Rosen & Mehan, 2003), the school

prepares students from underrepresented minority backgrounds to enroll in the nation's most competitive colleges and universities.

The school selects through a lottery low-income sixth grade students with high potential but under-developed skills. "Low income" is defined as a family income that is no more than twice the federal level for free and reduced lunch. In addition, neither parent nor guardian can be a graduate of a 4-year college or university. In the 2003/2004 school year, 58.1% of the student population was Latino, 13.3% African American, 20% Asian, 6% White, 2.2% Filipino and 0.4% Pacific Islander.

The school has achieved a measure of success: 80% of students in the first graduating class (2004) and 90% of the class of 2005 have enrolled in colleges such as Berkeley, UCLA, UCSD, Harvard, MIT, Dartmouth, and Claremont; 44% of the class of 2005 are enrolled in UC, 27% in CSU, 16% in private schools. The remaining 9.7% are enrolled in community colleges with an option to transfer to UC after two years. For the first time, enough students from comparison groups graduated from high school in 2005 so that we can compare the academic records of students who applied to Preuss and were accepted with those who applied and were not accepted. CREATE researchers (Morales et al., 2006) interviewed 12 of 19 students from the class of 2005 in the comparison group and all 31 students who started Preuss as 6th graders and graduated in 2005. Whereas 90% of Preuss School graduates enrolled in four-year colleges in Fall 2005, CREATE researchers estimate that between 42.1% and 78.9% of the students in the Comparison Group enrolled in four-year colleges in Fall 2005.[2]

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[2] CREATE researchers could report only a range among the comparison group because not all 19 students were available for interview. Of the comparison group students who agreed to be interviewed, only two-thirds, or 66.67%, reported that they would be attending a 4-year college (for details see McClure et al, 2006).

Creating a College-Going Culture at the Preuss School

Oakes (2003) has identified seven conditions that are critical for developing

equitable educational access: safe and adequate school facilities, rigorous academic

curriculum, qualified teachers, intensive academic and social supports, a college-going

school culture, opportunities for students to develop a multi-cultural college-going school

identity, and family-neighborhood-school connections. Although Oakes' model was not

explicitly used to build the academic plan of the Preuss School, it serves heuristically to

organize a presentation of the school's structure and culture.

A College-Going School Culture

The educators at the Preuss School seek to establish a "college-going school

culture"—a "conditio[n] that students in educationally disadvantaged communities

require for learning and successful college preparation" (Oakes, 2003: 2). All the other

"critical conditions" for equity and excellence enacted at Preuss flow from this primary

one. A college-going culture develops when "teachers, administrators, and students

expect students to have all the experiences they need for high achievement and college

preparation . . . . Students believe that college is for *them* and is not reserved for the

exceptional few who triumph over adversity to rise above all others" (Oakes, 2003).

Elements of a college-going culture include a shared purpose shown through rituals,

traditions, values, symbols, artifacts and relationships that characterize a school's

personality. A school culture is important because it "shapes the way students, teachers,

and administrators think feel and act" (Peterson & Deal, 2002: 9).

Some of the symbols that focus students on college are the school's dress code, the

location of the school, and the daily presence of UCSD students as tutors. Preuss students

wear uniforms to school, which are intended to symbolize explicitly their participation in a college preparatory school. The presence of the school on the university's campus is intended to orient students to many dimensions of college life. Preuss students take courses at the university and serve as interns in academic departments on campus which gives them access to professors and students, thereby increasing their knowledge of the college-going experience and connecting them to valuable social networks.

UCSD students serve as tutors at the Preuss School. In addition to assisting Preusss students with their academic work—which is their explicit purpose—they also serve as role models for the students they tutor. Preuss courses are taught in a block schedule, which means that students rotate through their eight classes on alternate days, mimicking the college MWF and TTH class schedules. Preuss graduates who return to campus for alumni days also provide insight into the college-going experience.

The middle school was built next to the high school to help foster a college-going culture. Doing so introduces students to the idea of preparing for college early and enables younger students to learn some aspects of the "hidden curriculum" from older students. The ecology of Preuss classrooms reinforces college going. Tutoring spaces are built into each classroom. "How to Get to College" posters which include the University of California A-G requirements adorn classroom walls. Such information is intended to reinforce the expectation that Preuss students are college bound.

The application process itself introduces students to Preuss's college-going culture. The application form resembles a college application, which is intended to invite students to think about college from the start. Students are asked to describe their reasons for

wanting to attend the school, discuss their commitment to the rigorous courses they will

encounter, and express their interest in attending college.

Students explore different types of colleges and learn about requirements, costs, and

potential sources of support. They tour the UCSD campus and interact with college tutors

on a daily basis. The college application process, including writing college essays, is a

regular part of the student's daily life. The school requires all students to apply to at least

one University of California campus, one California State University campus, and one

private college or university.

Safe and Adequate School Facilities and the Cost of Commuting

The Preuss School is located on the UCSD campus on a mesa above the village of

La Jolla, one of the most affluent neighborhoods in sdouthern California. Built in 1999,

the school has up-to-date science, computer, music, and art facilities for 750+ middle

school and high school students. Classrooms, built to accommodate 25 students each,

have specially designed spaces for one-to-one and group tutoring.

The school's physical and cultural distance from the neighborhoods of the students

who attend the school cuts two ways. On the one hand, the location of the school, a

considerable distance from the low-income neighborhoods in which the students reside,

can provide a safer environment for learning. Its location on a college campus provides a

symbolic connection to the students' intended future as college students. On the other

hand, that very distance causes both physical and cultural stress. The students must

commute—often by bus and trolley—45 to 60 minutes to and from their homes to the

school, a condition that induces fatigue and separation from neighborhood friends—and

sometimes, even family members (Khalil et al., 2006).

Students told CREATE researchers (Khalil et al., 2006) that it was difficult for their parents to understand the challenges posed by the time it took to travel the physical distance between school and home:

> **Gabriela**: But it's like you guys have to also realize that it's hard on me already trying to come to school, like being away all the time.

> **Gloria**: They don't realize like, it does get hard, because like all the homework and we have more than 6 classes, then we get home late.

Students also felt their parents did not understand the stress that difficult academic material, such as tests, AP classes, and homework associated with the college-going culture being cultivated at Preuss, placed on them. The following quotes are representative of students' assessments:

> **Gloria**: I don't think that they really understand what we're going through, what students go through in this school, especially because it's so much harder, and there's so many high expectations academically.

> **Natalia**: It is a really tough schedule. Not only because we get up early, cause like regular high schools, they get up early, but we get out really late and you know, other high schools they are out at 2 or 3, and we come home at about 5:30. That doesn't give us enough time to do our homework, relax, you know like just hang out during the week. Sometimes it is hard to do 2 hours of homework every night, which is what most of us do. And we don't have much time to go home and relax.

> **Jane**: They don't understand that I'm taking like, right now I'm taking 3 AP classes, and they don't understand that it's hard, and they don't understand that I'm taking 8 classes, and I'm required to take higher level classes.

> **Aaron**: I know that my… my mom…she doesn't really understand… I tell her, oh yeah we have all these SATs and all that, and she's like, oh what's SATs? They're just easy, just take them. And I was like, well it's not that easy. AP courses, they're hard.

> **Nicole**: I don't think they know exactly how hard it is for me, and how stressful.

Lizzy: They know that it's hard, but sometimes I just feel like they don't understand how hard, because my parents they never went to high school, they don't know what it feels like to try to succeed at something, or try to go to college.

Shantell: I think they have an idea but I don't think they know to the magnitude like what it really takes. They have an idea that yeah you have to have a little something different if you want to survive in that school, but I don't think they understand the magnitude in which like, what it takes out of you to be at this school.

Gabriela: They realize it, but then… they realize the big things, like you guys have SAT I mean you guys have AP testing, you guys have to do good in your classes, but that's overall. But it's like you guys have to also realize that it's hard on me already trying to come to school, like being away all the time, like not being able to go out with my friends, and that like just being myself, just being a kid I guess you could say.

Students said that subscribing to the school's college-going culture required them to make their academic responsibilities a top priority, a choice that at times conflicted with the desires of the family to spend more time together. Clarisa stated "The whole point about coming here, with having to stay after school, you really don't have time for other stuff. It just has to be Preuss. Your whole life is Preuss. That is how it was for me."

Natalia echoed the "Preuss is your life" theme. It was an experience that demanded students fill their Monday through Friday schedule with academic activities to the exclusion of non-academic activities: family, friends, and time for themselves. Whether it was the commute to and from school, taking college preparatory courses, participating in academically oriented student clubs, devoting one to two hours a day to homework, projects, or engaging in community service, Preuss school students worked on their "college-bound" identity in some form or another on a daily basis during the academic year.

Natalia described the tension created as a result of participating in two competing spaces:

> It is hard because me and my mom have a lot of fights because of that. 'Cuz most of the time my room is clean and everything, but the thing is that I don't have enough time to like help out around the house more because I am doing stuff like homework and she just gets frustrated because I am not doing what she is telling me to do because I am trying to do what I need to do for school. Sometimes she sees me watching TV and she is like, 'Why aren't you doing anything?' I just need some breaks in between my homework, and she gets all mad cause she thinks I am not doing anything. So it is like, 'Ah, I can't relax.' It is like I get home and still have all of this pressure. Sometimes it is frustrating. It builds up sometimes. I am like, 'go away.'

Laura faced similar disagreements with her mom:

> Yeah my mom sometimes frustrates me. Sometimes I am like 'I have to take this test or that test' and she is like 'Ok, ok, ok…' I sometimes can't really explain it, like the college application, sometimes I couldn't really explain to her. She was like, '*¿Y, ya las acabaste?'* [Are you done with them?] I am 'like almost.' Then I would be working a lot, she'll see me lock myself up right when I get home and start doing work, and then she is like '*¿Qué haces en tu cuarto encerrada* all day?' [What do you do locked up all day?] and I am like, 'I am working on school work.' And she is like, 'When are you going to do the dishes, when are you going to clean up the house, when are you going to do this?'

Rigorous Academic Curriculum

Research shows that students enrolled in higher-level courses perform better than those in lower-level courses. Haycock (1997) reports that students who take fewer than four vocational education credits in high school score an average of 299 on NAEP reading tests, whereas students who take eight or more vocational credits score an average of 269 on those tests. On the other hand, White, Black, and Latino students who

take precalculus or calculus courses score, on the average, of 40 points higher on NAEP

mathematics tests than students who take only pre-algebra or general math courses.

These results illuminate the traditional divide between college-prep and voc ed courses,

where college prep classes make more academic demands than voc ed courses, while

voc ed courses emphasize hands-on learning. Students who are tracked into vocational

courses seldom have the opportunity to enroll in rigorous academic courses. A multiple

pathways strategy of high school reform would provide students with the hands-on,

career training, real-world work experience *and* an academic curriculum.

To carry out a multiple pathways strategy, the Preuss School serves as an example

of one school within the district's portfolio with an emphasis on college preparation.

However, the Preuss School unites the best features of college-prep courses with the best

features of vocational education. All Preuss classes emphasize project-based learning

and a portfolio of assessments. The school's curriculum fulfills or exceeds the

University of California and California State University entry requirements,

operationalized as the "A-G" course requirements. Courses at Preuss are taught on a

block schedule that resembles college; they include: 4 years of English; 4 years of math;

4 years of science, including 3 lab sciences; 4 years of a foreign language; and 1 year of

a visual and performing art. The college-prep curriculum symbolizes the high

expectations that the school has for each student, which in turn is intended to emphasize

the college-going culture of learning being instantiated at the school.

The curriculum and pedagogy of the Preuss School is based on a belief in the value

of the "liberal arts" education that can be traced back to Dewey (1900,1902 [1956]). The

educators at the school want every graduating student to be capable of written and spoken

expression (in both English and another language), mathematical reasoning,

understanding scientific procedures and results, and an appreciation of the diverse

cultures that make up western and non-western civilizations. The fine and performing arts

are not construed as *electives* but are also central to students' intellectual development.

The senior year of the school is integrated with UCSD; seniors are expected to take at

least one UCSD course during their final year.

Designed to prepare students for the types of evaluations they will encounter in

college and the work place, the evaluation practices adopted by the Preuss School can

also be traced through the Coalition of Essential Schools (Sizer, 1982, 1994) to Dewey

(1900,1902 [1956]). In addition to taking the required regimen of state-mandated

standardized tests and UC/CSU mandated college entrance exams, Preuss students are

expected to exhibit their work annually. This includes a written and oral presentation to a

panel of judges—ideally composed of a Preuss faculty member, a UCSD faculty member,

and a parent or community member. A portfolio of measure--test scores, students' course

work, grades, exhibitions--is intended to give a more comprehensive view of students'

academic progress than high stakes tests alone afford.[3]

My informal assessment of this practice, gathered as a "judge," suggests it develops

students' confidence in speaking confidently to adults. Many have recognized this skill

as empowering students in the classroom and the workplace, and it reflects confidence,

ease, and familiarity with the dominant culture's norms, manners, and ways of speaking.

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[3] This is the position advocated by the Civil Rights Project, the New York Performance Standards
Consortium, the Coalition for Authentic Reform in Massachusetts, the American Evaluation Association,
and the American Educational Research Association. For example, the American Evaluation Association
(2002: 1) said: "High-stakes testing leads to under-serving or mis-serving all students, especially the most
needy and vulnerable, thereby violating the principle of "do no harm." AERA (2000: 1) based its position
on the 1999 *Standards for Educational and Psychological Testing*: "Decisions that affect individual
students' life chances or educational opportunities should not be made on the basis of test scores alone."

Together, these skills promote students' social and cultural capital, and in turn, opportunities to learn and advance through the educational and economic systems (Lareau, 2003).

Intensive Academic and Social Supports

Preuss students are not typical of the students who routinely apply to college from private or affluent public schools, however. Some of the students speak English as a second language, some have not been successful in elementary or middle school, and none of the students' parents has graduated from college, or in some cases, even high school.

Recognizing that the students who enroll at Preuss are differentially prepared, the educators at the school have instituted a variety of academic and social supports or "scaffolds," to assist students to meet the challenges of the rigorous curriculum required for entering four-year colleges and universities. Most notably, the school extends its year by 18 days, which gives students more opportunities to meet the academic demands of the school. UCSD students serve as tutors in class and after school. Students still in need of additional help are invited to participate in additional tutoring sessions during "Saturday Academies." In this way, the Preuss School has reversed the conventional time-curriculum relationship. The school has established high instructional standards and presents rigorous curriculum to all students, while at the same time, the school varies the academic and social supports to enable all students to meet high academic standards. The relationship between academic performance and the enactment of needed social supports is displayed in Figure 1. The greater the students' academic performance, the fewer

scaffolds are needed; likewise, the greater the students' academic needs, the more

academic and social supports are activated.
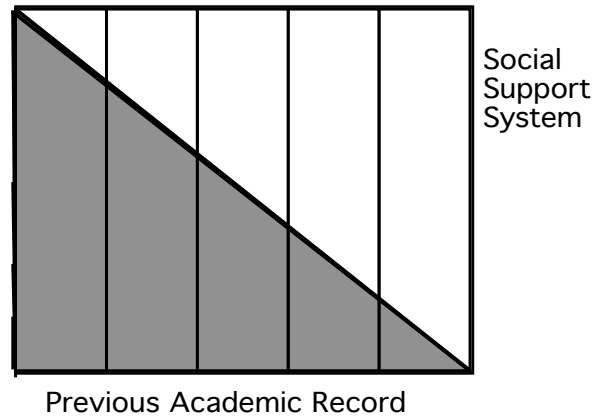
Figure 1: Dynamic Support of Academic Development

Students have an advisory teacher who serves as advocate and counselor for the

same group of students from grades 6-12. Modeled after the successful AVID program

(Mehan et al., 1996), the advisory class is a regular feature in the student's schedule,

thereby emphasizing its importance. This class enables students and teachers to develop

trusting relationships (Noddings, 1994) and to ensure that student achievement is

monitored closely (Meier, 1995; Sizer, 2004). In order to ensure that the advisory teacher

has adequate time to do this "advisory work," the school provides teachers with 6 1/2

release days per year. A substitute teacher, trained on-site, rotates through the classes and

provides quality instruction. During this time, the advisory teachers observe their students

in classes, communicate with parents, or conduct personal conferences.

Research on the college preparation practices of well-to-do students and elite

schools (Cookson & Percell, 1985; McDonough, 1997) shows that parents and counselors

invest a considerable energy in developing students' portfolios and connecting them to

college admissions officers. Because the parents of Preuss School students have not

graduated from college, they often lack the cultural and social capital needed to make these connections. The school's counselor has assumed these responsibilities on behalf of the school's students. She ensures that they take requisite admissions tests, secure fee waivers, obtain letters of recommendation, and apply to colleges—at least one CSU, one UC, and one private school

Quality Teachers

Current federal and state policy demands that schools have "highly qualified teachers." Unfortunately, the field does not have a commonly agreed upon definition of quality. Instead, "quality" is measured technically, in terms of degrees earned, credentials held, and whether courses are taught by teachers with degrees or credentials. For example, to comply with federal law while at the same time supplying enough teachers for the state's public schools, California now defines "practicing teachers who have demonstrated knowledge of subject matter and who have either a credential or a plan for getting one as 'highly qualified,' regardless of their actual capacity to teach" (Esch et al, 2005: 3).

In an effort to increase the faculty's teaching expertise in ways that go beyond tabulating degrees, credentials, and years of experience, Preuss School teachers engage in professional development activities at the school site during the school day. Once a week, school starts late; this time is set aside for teacher professional development. Teachers meet in grade-level or department teams to plan collaboratively, examine students' work, and engage in a locally construed version of "lesson study" (Lewis, 2002).

Opportunities to Develop a Multi-Cultural College-Going School Identity

When students see the acquisition of skills in the academic community and majority language and culture in an additive rather than a subtractive fashion, then it can be said that students develop a multi-cultural college-going identity (Oakes, 2003; cf. Gibson, 1987:189; Valenzuela, 1999). Students interviewed by Khalil et al (2006) described their education at Preuss as an additive not a subtractive process:

"*Aunque la mona se vista de seda, mona se queda*"[4], was the response Khalil et al (2006) received from one student when asked if she felt comfortable expressing her cultural identity on campus. All students who this research team interviewed said they did not feel they had to forfeit their cultural identities in order to form their academic identities. Instead, students felt that their academic identity complimented their cultural identity.

Students described the process of negotiating home and school identities as learning to express the appropriate behavior in each setting. While on campus, students understood that there was a certain way of talking required to interact properly, but when they returned home to their families and community, students did not hesitate to switch to the speech patterns and behavior expected there. When asked if she felt she needed to act differently when on campus, "Teresa" said:

> **Teresa**: I probably interact differently, but I still act the same just probably here because the education levels, they're different here than they are at home. So I probably have to talk more like not ghetto, but like more at their level.
>
> **Researcher**: At their level, as teachers or staff?

---

[4] "Even if you dress a doll in silk, she remains a doll."

Teresa: Yeah, well, here probably I know more educational stuff than other seniors at other high schools do, like some words that aren't even that complicated they don't even know the definition of it.

Researcher: Have you ever been caught in that situation where you--

Teresa: I have. It's like, 'What's that?' I was like, 'You're my grade, you don't know that stuff?' I'm just like, 'Oh.' But then I have to explain and go more into detail and stuff. So I have to like watch out how I'm using the language kind of thing. Also in Spanish, even I got some classes-- well, here, the teacher, not the teachers, but up until 8th grade, we're taught Spanish. Well, my mom and my dad, they at least finished high school so that they know their Spanish words very well. But like my uncles and stuff, they don't, so I need to like be careful how I talk and stuff, so I won't offend them.

Researcher: The academic Spanish?

Teresa: Yeah, the academic Spanish. Like *los acentos* [the accents] and all of that.

Teresa described the demands of maintaining two fully functioning identities. On the one hand, Teresa could maneuver through the challenges of the academic setting but still caught herself policing what she called her "ghetto" self. On the other hand, she tried to taper off her academic Spanish while talking to family members as well as toning down her "school girl" speech characteristics when talking with neighborhood friends.

Furthermore, Preuss students did not see the adoption of an academic identity as a culture stripping in which they were trying to "act white" while sacrificing their home-based cultural identity. Instead, they saw achieving in the academic setting as a normal progression. In the final analysis, students realized they were participating in two distinct worlds—one at home and the other at school. But on campus they felt as though both identities could live side by side.

While a college-going identity that incorporated students' culture developed on the Preuss campus, students reported that, in general, their teachers did not explicitly

incorporate their home experiences into the classroom. When they did, they tended to do so in informal conversations, not in lessons:

> **Researcher**: Is there anybody who does (bring in home identity to the classroom)?
>
> **Gloria**: After breaks, most teachers will say, 'oh so what did you do over the break?' That's when the teacher says, 'well I did this and this,' and then you can relate to the teacher. If your teacher's from your certain culture, sometimes you feel like a little closer to that teacher . . . . And they'll be like, "well I'm Catholic, and I'm doing Lent right now" and you can relate to it if you're Catholic too. If they're Mexican they say 'I eat certain food' and you say, 'oh yeah yeah well I know what you're talking about.' And if the teacher's black and he's saying all these foods that I don't know, then I know that the African American kids are going to be like, 'oh yeah I know what you're talking about,' but I'm not going to know. It kinda' causes you to be closer to the teacher maybe, if you know what they're talking about, like if they say like a certain neighborhood, if they say oh I live in North Park and I live by Hoover and you know it's bad, you know what they're talking about, and some kids are like 'I don't have no clue what you're talking about, I've never been around that, I don't know where that's at'. I think that the different like, culture of the teacher, the race might cause you to be a little closer to them. Or just the fact of how they are, their personality, some teachers are very funny, and you like when they're funny, maybe you like that teacher more than all others or something.

Students explained that humanities and social science teachers especially found a way to bring students' home experiences into the formal curriculum. Latoya described how English and history teachers incorporated information from students' everyday lives through interviewing and writing essays on parents:

> **Researcher**: Do you think that your home beliefs, your home cultures, your home experiences are brought into classroom lessons?
>
> **Latoya**: At times. Like say in history we were learning about when they told the village stories and they just passed the stories on generation to generation. We were learning about primary sources. So my history teacher had us go home, interview our parents about an event, come back

to class and make a mask out of that that represented the story. So that brought your home to school.

And also we had to write an essay on a hero in English. I wrote about my mom and how she's my role model and how she inspires me. In AP English, the class I'm in now, when you're writing your essay they'll say try to bring your personal experiences in cause that makes your essay stronger because you have those examples. They try a lot, more in history and English, to kind of bring in your home life because that helps you make things stronger, it makes things more personal and more exciting to read.

Gloria explained experiences from students' home life have been introduced through debates in history class:

Researcher: And do you think there's room in class to bring in your ideas? Do they let you debate it out?

Gloria: It depends on the class, like a history class I have it's a lot of debate. Like, 9th grade, that would be every Friday we would have a debate and he would bring up a subject and he would, my teacher I remember would just stand up and step out, kids would just be on kids. . . . That's what some teachers do, like, they'll start it off, well why, they'll start questioning you, and they'll be like, 'oh does anybody contradict that?' And then a student will stand up, 'well I do' and they'll be like, 'why?' And then like, the student kind of catches the idea that you have to say why you disagree with that person. And also like the teacher will like step back, and the students will raise their hand and then speak, like they don't have to be called on. They taught you respect in this school, so it's not like everyone's talking at the same time. Usually when a person talks everyone else is quiet and listens to that person, which lets that person feel like they're being listened to like everybody else.

Maria agreed teachers were usually receptive when students introduced their home experiences:

Researcher: And when you do (bring up home community), what is the teachers' response?

Maria: They listen. They listen and then they give you their opinion on it. They're never like, 'oh I don't want to hear it.' They'll listen.

In sum, even though students said teachers did not actively encourage the expression of students' home identities in their classrooms, cultural identities did flourish on campus alongside the development of academic identities. The development and maintenance of dual identities was facilitated by the students themselves—in large part because of high number of "minority" students on campus.

Family-Neighborhood-School Connections

Effective schools do not exist in isolation. They connect to neighborhood businesses, non-profit organizations such as YMCAs, churches, and Boys and Girls clubs. Effective schools value and make use of parents' strengths as a part of students' education. Educators and community groups work together to ensure that families have access to knowledge about college going and the political strategies to act on that knowledge.

Parents are expected to participate in school activities, notably by volunteering to serve on governance committees, energizing phone banks, and supervising student clubs. However, the geographic (and cultural) distance between students' homes and the Preuss School places a burden on parents as well as students, and it is often difficult for parents from low-income neighborhoods to meet these and other expectations.

Perhaps the most intriguing way the school connects parents to the school is by appropriating their "funds of knowledge" (González, Moll, & Amanti, 2004; Roseberry, Warren, & Conant, 1992; Lee, 1995, 2000, 2001). Parents who are fluent speakers of languages other than English have been invited to converse with Preuss students in advanced language classes. In that way, students gain exposure to naturally occurring spoken Spanish, Vietnamese, and other languages, and parents connect in meaningful

ways to the life of the school. Appropriating community funds of knowledge for instructional purposes in this way has the additional benefit of demonstrating that the households and neighborhoods of even the poorest families are powerful sources of knowledge.

In addition, the Preuss principal, has conducted parent education courses that earn community college credit in which parents are exposed to the expectations of the school, their students' course material, college requirements, costs, and sources of financial aid. The high school counselor and advisory teachers also conduct regular application and financial aid workshops for students and their parents, thereby attempting to reduce the mystery of the college-going process.

Summary and Conclusions

Whether they are planning to enter college or the workplace after graduation, high school students need to be educated to a high level in reading comprehension, computation, writing, problem solving, and reasoning (Murnane & Levy, 2004; ACT, 2006). High school graduates need this high level of preparation if they are to succeed in college courses without remediation or to enter work-force training programs ready to learn job-specific skills. This line of thinking concludes that preparing students for college and preparing students for careers is more similar than it is different. Further, the educational practice of differentiating the curriculum such that one group of students is placed on a "college prep" track and another group of students is placed on a traditional "voc ed" track is neither productive nor democratic. The increasing demands of the workforce and the long-standing need for well-prepared citizens in order to sustain the

fragility of the democratic system reinforce the need to dismantle the present tracking

system.

I have described one model for building multiple pathways to college and career

when students complete high school. Safe and adequate school facilities, rigorous

academic curriculum, qualified teachers, intensive academic and social supports, a

college-going school culture, opportunities for students to develop a multi-cultural

college-going school identity, and family-neighborhood-school connections are the

essential features of this "detracking" model (Oakes, 2003). It is my contention that if any

model of multiple pathways is to succeed in preparing students to leave high school with

meaningful choices, then these seven conditions should be designed into each pathway to

college and career. Uniting the academic demands of college prep courses with the

hands-on experiences of voc ed courses not only will fulfill Dewey's dream, but, more

importantly, will do a better job of preparing *all* students to be able to make informed

choices about college and career when they complete high school.

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