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ABSTRACT

As experienced by vocational teachers in five California comprehensive high schools, the peripheral nature of vocational education results from two dimensions of school context. First, the purposes and priorities of these comprehensive high schools tend to be ordered in ways that concentrate symbolic acclaim and material resources on academic courses or teachers. An institutional orientation toward the college-bound permeates these schools, diminishing the contributions of vocational and other nonacademic teachers, and reinforcing a long-standing gap between theory and practice and between intellectual and practical endeavors. The main contribution made by vocational teachers is to absorb large numbers of those students who have the greatest difficulty in conventional academic classes. Second, the present configuration of staffing, course offerings, and student placement results in a compressed curriculum that teachers frequently find difficult to defend in terms of preparation for work. The purposes of genuine work education are further compromised as the explicit aims of vocational education are subsumed by other purposes and other dynamics, mostly having to do with responses to academically marginal students. (Appendixes include a list of 33 references and a description of the five public comprehensive high schools that were studied.) (YLB)

National Center for Research in
Vocational Education

University of California, Berkeley

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Scenario 1: At a comprehensive high school in Georgia, the principal singles out the vocational-technical program as one of the school's strongest features. Students have recently completed construction of a house, and have turned the profits from its sale back into further support of the program. Doing "real work," the principal says, proves motivating to the students and their teachers, and gains support for the school in the community.

Scenario 2: A select group of students in a large California high school participates in a mathematics- and computer-oriented course and corporate mentorship program organized jointly by the school and a prominent high tech corporation. Part of the aim of the program is to introduce students to the "real work" of engineering and mathematics in the corporate environment. The participants number fewer than twenty, or less than one percent of the school's population. For most students in the school, however, glimpses of the adult work world come in the form of infrequent career fairs, occasional classroom speakers, and sporadic examples of workplace applications for academic material.

Scenario 3: An urban high school in California experiences a dramatic change in its student population—an influx of students who arrive at the school with a startling range of academic preparation, and primary languages other than English. Some of them bring past traumas and present troubles. A teacher trained in business finds herself teaching three periods of ESL English, while the department's Recordkeeping course is defined by its teacher as "the lowest level math class the school has to offer." In these and other vocational courses, the curriculum is built not around "special interests (in work)" but around what teachers define as "special needs."

Work on the Margins

These scenarios call attention to the multiple realities surrounding vocationalism in comprehensive high schools in the United States. They also serve to bound and temper the conclusions we reached following three years' study in five California comprehensive schools.[1] The contexts that shape teachers' lives and work in these schools are in some ways the product of California's particular environment: a prominent state presence in educational policymaking, a remarkably diverse student population, a concerted push toward an academic curriculum, and severe limitations on fiscal resources. To a large

[1] A description of the five schools is provided in Appendix A. The names of all persons, schools, and communities have been changed to preserve confidentiality and anonymity. The code numbers that follow direct quotations from interviews with teachers or administrators provide a reference to the original interview.

extent, however, the California circumstances also reflect more general contemporary features of American urban and suburban secondary schools, particularly in the combination of fiscal constraints and pressures toward academic performance. Together, these five schools present a range of what we might term "ordinary" urban and suburban comprehensive high schools. Each bears the stamp of traditional purposes, programs, and practices; and each is home to innovative impulses in the face of changing circumstances

Only rarely in these comprehensive high schools did we find ready-to-hand examples of vocational curricula linked both to academic study and to real work participation in the local community and local economy. Such examples as we are able to find, whether in small-town Georgia (Scenario 1) or in California (aspects of Scenario 2), suggest a conception of secondary education in which occupational and academic pursuits are linked, and in which long-standing dichotomies between theory and practice, school and work, are diminished. That conception, however, remains at some distance from prevailing practice. In the comprehensive high schools we studied, work resides on the margins in two major ways. First, we were struck by the polarities between academic study and work that accompany the school's pervasive orientation toward college preparation. As a diverse and important enterprise in the larger society, work is nearly absent from the curriculum and goals of the high school. We share with Grubb (forthcoming) the observation that

> The high school is an inescapably vocational institution . . . [y]et the occupational focus of the high school is largely hidden. . . . These developments have opened up a paradox: even as the high school has become increasingly crucial to occupational futures, most students regard it as an academic exercise.

Teachers and administrators alike expressed relatively undeveloped conceptions of adult work and its relationship to academic learning. That is, everyone recognizes that academic study for the college bound is in some diffuse sense preparation for work, but the specifics of the relation are hardly evident in the curriculum or in the teaching priorities expressed by teachers. In effect, the problem of linking academic study to participation in adult work is, for the academically successful students and their teachers, removed to the domain of higher education (or beyond). At the same time, the few nominally work-oriented programs in the high school tend to center on specific technical skills, oriented toward entry level positions in a relatively narrow range of occupational arenas. In this

respect, the designated vocational curriculum reinforces the sense that theory and practice, or academic study and work, are separate and differently valued enterprises.

Nonetheless (and ironically), there is little that is distinctly or exclusively "vocational" about the goals that most of the vocational teachers espouse, the pattern of courses in most vocational departments, or the logic governing student placement in vocational classes. In this regard, programs designated "vocational" are not oriented toward specific employment as much as they are oriented toward an expansive conception of "preparation for life." Vocational teachers extend the rationale for their courses well beyond preparation for work; they express a combination of vocational and life goals that fit the student population they encounter and the resources with which they work.

In the eyes of teachers and administrators, the opportunities for pursuing a broader and richer conception of vocationalism—one more in tune with anticipated developments in the nature of work, the workforce, and the workplace—are diminished by certain constraints of their own school workplace. The structure of the salaried work day and work year offer few opportunities for teachers to deliberate or debate such matters. Teachers themselves are immersed in the work of teaching and the workplace of the school; the work that others do, and the specific ways in which it draws upon the academic disciplines, is not very visible to most teachers. State high school graduation requirements reflect a push toward more extensive participation in academic courses, thus squeezing out the non-academic electives; to date, there has been little incentive or pressure to figure out what might be intellectually rich and demanding in the non-academic subjects. Any movement to strengthen vocational aspects of the school's program, then, must contend with the way in which the school's program is dominated by the college-bound student and by admission requirements established by institutions of higher education. Vocational teachers who seek academic credit for their courses (e.g., art credit for a photography course) may be told that they are not properly qualified to teach such a course or may find themselves embroiled in battles over ownership of course titles and curriculum content.[2]

Other dynamics are also at work here, mostly having to do with responses to academically marginal students. Our case studies are consistent with the picture emerging

[2] In one recent critique of the aftermath of 1980s reforms, Toch (1991) lambasts schools precisely for awarding academic credit for non-academic studies, and for engaging in widespread misassignment of teachers.

from national data: Vocational teachers and courses serve as a form of "safety valve" in the comprehensive high school, a mechanism for preserving enrollment (forestalling dropout) among those who are not academically successful. Vocational classes are used to absorb increasing numbers of students who have been designated as "limited-English speaking," "special education," "remedial," or "at risk." Vocational offerings are valued by administrators and counselors to the extent that they appeal successfully to such students, and to the extent that they relieve some of the burden on the school for remedial work in academic basic skills (particularly math). We found the purposes, programs, and people specifically designated as "vocational" thus occupying a marginal but crucial place in the status hierarchy of the comprehensive high school. Certainly there were individual exceptions, but the prevailing pattern was clear. (For a summary of the characteristic patterns in each school, plus selected school demographics, see Table 1.)

Our study engages in a search for the ways in which vocationalism is or might be made manifest and legitimate in the comprehensive high school. This paper begins the search by describing the various mechanisms that place work on the margins of the secondary school curriculum, and that distinguish between "vocational" and "academic" educators. It opens a lens on the professional work world of those teachers who consider themselves "vocational" teachers: the goals they embrace, the commitments they form, the place they occupy in the larger teacher community, and the orientation they demonstrate toward students and subject.[3] In *Work on the Margins*, we investigate two salient features of school context that contribute to vocational teachers' orientation toward their work and their commitment to teaching:

- the institutional priorities that assign value to a teacher's work, and that in turn help shape teachers' identity and community; and
- the configurations of curriculum content and student clientele that make up the substance of "vocational education" in the work of individual teachers, departments, and schools.

[3] The terms "vocational" and "academic" are set off in quotation marks to underscore a dilemma. In our effort to describe the professional worlds of secondary school teachers, we found ourselves obligated to respect the language they employed to describe personal perspectives and institutional realities. At the same time, researchers and teachers alike came to struggle with the limits of such dichotomies and the absence of a properly "integrative" language.

Table 1

Summary Characteristics of the Five Schools (1989-1990)

SCHOOL CHARACTERISTICS	OAK VALLEY	ONYX RIDGE	VALLEY	ESPERANZA	RANCHO
Size S<885, M 885-1500 L 1501-2075, L+>2075	Large +	Medium	Medium	Medium	Large
Minority % L < 10%, M 10-29%, H 30-55%, H+ >55%	Medium	High	High +	High +	High
Student Achievement (1=highest; 5=lowest)	2.3	2.3	3.7	3.2	3.3
Location of school	Suburban district	Urban district, "suburban edge"	Urban	Urban	Urban
Grade Structure	9-12	10-12	9-12	9-12	9-12
Teachers in industrial arts, home ec, business	17 (12.5% of staff)	5 (9% of staff)	7 (14% of staff)	9 (15% of staff)	8 (11.2% of staff)
The main "story" of vocational education	1. Suburban affluent school dominated by "college prep" 2. Decline in vocational staff and course offerings 3. Voc. teachers assigned to low-level academic courses 4. Increase in personal interest electives	1. "College prep" mission in a school with sizable bused-in minority population 2. Decline in vocational staff and course offerings 3. Vocational education converted to personal interest electives	1. Academic teachers discouraged by shift in student population 2. Relatively stable vocational program with traditional offerings 3. State-funded occupational programs tailored for special ed. students	1. School developing as science magnet 2. Decline in vocational staff and course offerings 3. Voc. ed. used to absorb ESL and special ed. students 4. Pressure to "market" personal interest electives	1. Non-traditional school org. into "learning units" 2. Decline in vocational staff and course offerings 3. Voc. ed. used to absorb ESL and special ed. students 4. Pressure to "market" personal interest electives

PURPOSES AND PRIORITIES

Teachers and administrators alike are well-attuned to the multiple purposes encompassed by secondary schools. As institutions, high schools are asked to ensure students' academic achievement, responsible behavior, ethical outlook, emotional well-being—and future employability. The multiple expectations placed on schools in turn translate into multiple pressures on individual teachers to do more than "merely teach." Although teachers do define certain niches for themselves, favoring certain purposes over others, they do so in the face of pressure to be and do more. In Bruckerhoff's (1991) recent portrait of the dominant cliques in a high school social studies department, the Academics concentrated on academic instruction in part by resisting administrators' efforts to press them into service in the extracurricular arena. The Coaches, whose place in the public eye depended on "taking the kids to state," devoted their energies to athletics and resisted pressures (during the season) to do more than rudimentary textbook teaching. Thus we might reasonably ask where, in the configuration of obligations and opportunities, we might locate students' preparation for a world of adult work. To whom does it fall, and what form does it take?

For nearly a century America's comprehensive secondary schools have placed vocationalism among their principal goals. Reform groups have periodically invoked visions of the nation's waning economic vitality to rally support for their proposals. Most teachers justify their curriculum priorities in light of what students will need for the future. Many of these perceived needs are directly or indirectly vocational. Seen this way, the elite boarding schools engaged in "preparing for power" are as distinctly vocational as an urban magnet school dedicated to the health occupations.[4] Yet we confront an institutional irony in comprehensive high schools. Broadly conceived as a preparation for productive adulthood, the vocational purposes of secondary schooling pervade these schools. Yet the curricula specifically and formally labeled as "vocational," and the teachers who offer them, have been viewed with a certain disdain or skepticism. By its critics, vocational education has been judged academically weak and occupationally inconsequential.[5]

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[4] On the orientation of elite boarding schools, see Cookson and Persell (1985). On specialized occupation-oriented schools and magnet schools, see Mitchell, Russell, and Benson (1989), and Metz (1986).

[5] Doubts about the economic return on the the investment in secondary vocational education are reflected in the reauthorization of the Carl D. Perkins Vocational Education Act, with its emphasis on tracking program outcomes both in the form of short-term job placements and longer-term work histories. Toch (1991), in a recent analysis of the school reform movement of the 1980s, makes vocational education one of the principal targets of criticism about the watering-down of the academic curriculum and the

In our own explorations of five comprehensive schools, we expected to encounter some expression, both individual and institutional, of the multiple purposes held out to high schools. We expected to hear and see the various ways in which schools and teachers order those purposes in practice. In particular, we were interested in the ways in which schools and teachers expressed their commitments to "preparation for work": How did they conceive of that task, and where did they place it among the array of priorities? Very quickly, we found ourselves plunged into debates over what is and should be "basic" in secondary education.

In this section, we examine the place that vocational preparation occupies amid the valued purposes of public high schools. These values are expressed in the assertions regarding purpose or mission put forth by individuals and institutions, and in the course content emphasized by individual teachers. At issue is the way in which the professed goals and values of the institution influence the organization of teachers' work and their relations with students.

The Ordering of Priorities

Debates over purpose are somewhat muted in the pronouncements of administrators who, as the official presence and voice of the schools, must find a way to accommodate diverse demands and expectations. Nonetheless, the prospects for valuing vocational education, or for pursuing an inventive integration of vocational and academic aims, rest in part with the stance assumed by administrators and counselors. Although not unaware of the strong vocational thread in secondary education, the administrators in our five high schools are wary of attaching work-related aims too firmly and too narrowly to programs that define themselves as "vocational." Elaine Eddy, the well-respected principal of Onyx Ridge High School, reflects a common stance of principals in the larger debate over what high school students need. She worries that narrow, immediately occupational approaches foreclose students' opportunities:

> I have to tell you that even personally I am not convinced that our job should be training kids for jobs in high school. I think we're doing a disservice to kids by having them shut down their options too soon and sending a message that all we're about is to prepare them for a job. And I

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perpetuation of insidious practices of tracking. See also the analysis of the outcomes of vocational education in California completed by Stern, Hoachlander, Choy, and Benson (1985).

> don't [think] that's what we're really all about. That's an aspect of what we're about, but I don't believe it's our primary purpose. (OR05702)

On the whole, the allocation of resources and the configuration of courses in these five schools are consistent with the widely shared priority placed on preparing students for college and for occupations dependent on higher education. At Onyx Ridge, the principal and the work experience coordinator both readily list Regional Occupation Programs (ROP) in which students enroll, but nearly all are located elsewhere.[6] A program in hotel management had been moved to another school prior to our study. An ROP in graphic arts is conducted by an Onyx Ridge teacher as an extension to the regular school day, but is not listed on the master schedule. Nor is the early childhood development program identified as an ROP offering. Elaine Eddy struck us as politically astute and aggressive in winning resources for her school; there is every reason to believe that if she saw ROP programs or other vocational programs as a symbolic or material resource, she would actively work to get them and acknowledge them. She does not. Nor is there much evidence in any of these schools that administrators or counselors value participation in "practical" or "vocational" courses as an essential part of all students' preparation for adult work or higher education.[7]

Asked where she would expand the Onyx Ridge program if her enrollment were to increase, principal Elaine Eddy envisions a curriculum that is responsive to fast-moving developments in the Pacific Rim, with an eye toward those students likely to pursue business majors in college:

> My dream would be to focus some of our curriculum and our new courses on the Pacific Rim. I would love to see us expand our offering, do everything from offering Japanese to some more business-type courses, as

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[6] The Regional Occupational Program (ROP) is a state program administered by the state department of education and implemented through county offices. ROPs offer entry-level job training for local job markets, plus career exploration and preparation for higher education in a related skill. The program is open to students sixteen and older. The state-funded salary support for ROP teachers enables comprehensive high schools to maintain a richer teacher-student ratio than they could otherwise support, or to avoid teacher layoffs as enrollments decline.

[7] On the whole, this is a view shared by policymakers. According to one recent fifty-state survey, only six states report any state-level requirement that all secondary students complete some form of vocational coursework as a condition of high school graduation. Nor is it clear that the coursework encompassed by such requirements is "vocational" in a traditional sense. In New York, for example, eighth grade students complete coursework in "applied academic" topics that include an introduction to technology and basic computer literacy (McDonnell & Grubb, 1991).

> one of our focuses. UC has a Pacific Rim emphasis and I think it would be terrific support. . . . We have lots of kids that are interested in business as a career. (OR057)

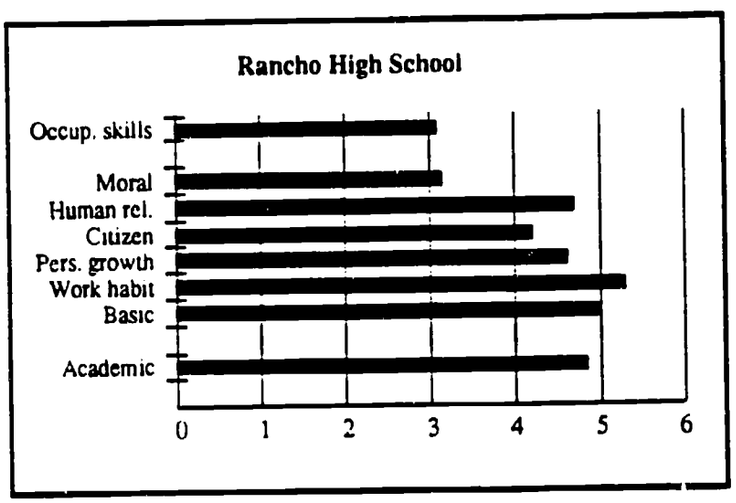
This picture is certainly not reflected in the present business-related curriculum at Onyx Ridge. The business department consists of a single teacher who spends five periods each day instructing students in rudimentary keyboard and computer applications skills. There appears to be no connection between that teacher's work and any broader considerations regarding business that may arise in the economics or history courses taught in the social studies department. At other schools, too, priorities for innovation, including those linked to work and careers, lie with the academic program.

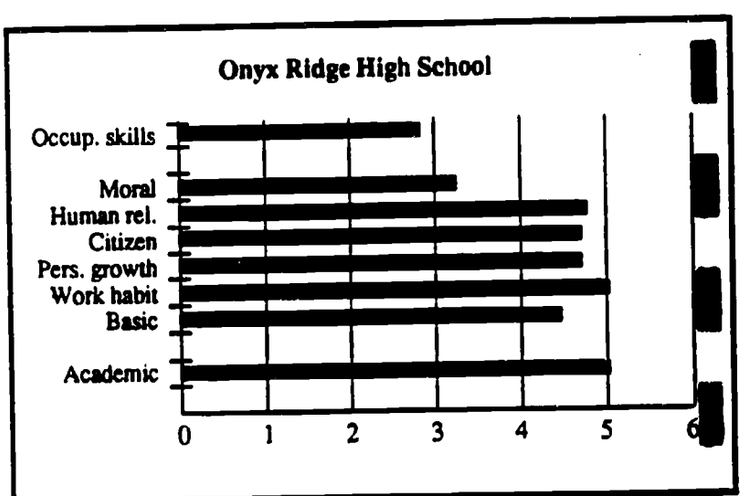
Teachers in these comprehensive schools, including the vocational teachers, would agree with Ms. Eddy that preparing students for a job is not "all we're about." Teachers were asked in surveys to rate the importance of each of eight goals to their own work with students. The aggregate measures allow us to distinguish teachers' own priorities from the official pronouncements of the school; they also allow a measure of goal consensus within and across schools. Figure 1 displays the 1990 goal profiles of our five sites.[8] In their responses, teachers show themselves engaged in the multiple purposes of high schools. As a group, they appear to embrace nearly all goals. That is, the school-level mean scores on six of the eight goals tend to be uniformly high.

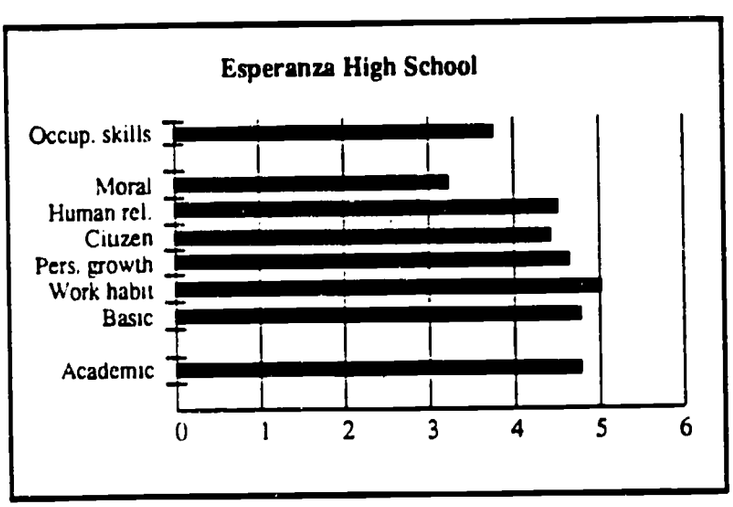
[8] The goal profile measure is one of eleven scale measures incorporated in the 1989 teacher survey, and six scales in the 1990 survey, that replicate measures used in the Administrator and Teacher Survey conducted as part of the 1984 High School & Beyond study.

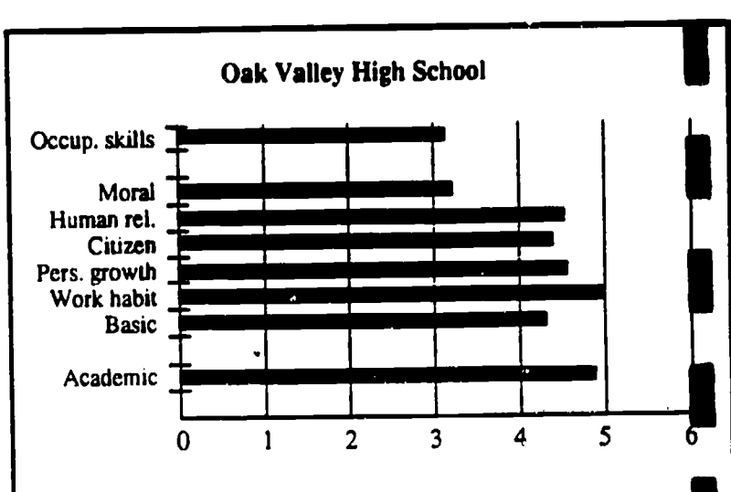
Figure 1

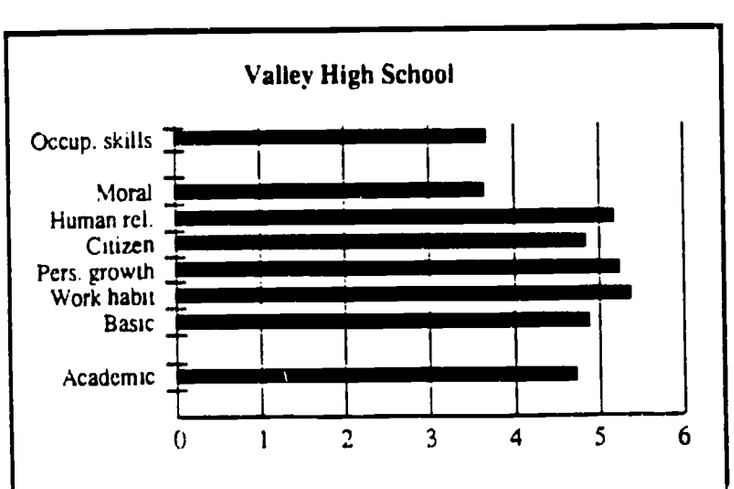
Teachers' Goal Priorities in Five Comprehensive High Schools











Although our five schools do vary in the emphasis placed on academic achievement, all differentiate clearly between the value placed on academics and the value placed on preparation for work in the near term (i.e., following completion of high school). At the school level, the teaching of specific occupational skills ranks markedly lower than all other goals except the teaching of moral and religious values.[9] Academic excellence, while valued, is more than equally balanced by teachers' emphasis on a set of outcomes that may appear less rigorous and more diffuse than academic achievement, but that have long-term relevance to employability and work success: work habits, basic skills, personal maturity, citizenship, and interpersonal relations. Teachers in all five of our field sites emphasize goals that they associate with what one teacher describes as "survival in an economic world." In this domain, however, most teachers distinguish quite clearly between preparation for a broadly defined world of work and preparation for specific occupational skills.

School-level ratings nonetheless mask the different conceptions held by individuals and groups within schools. Based on prior work, we would expect that teachers' personal histories, their present associations with a subject discipline and subject department, and their affiliations with a specific student clientele all contribute to their views of what is important to accomplish in teaching.

The survey measures suggest that vocational and academic teachers do in fact hold different conceptions of their work, even though the measures themselves are crude at best. Table 2 compares the goal profiles for vocational and academic teachers across the five comprehensive high schools.[10] The main difference between the two groups lies in the relative disregard shown by the academic teachers for content deemed narrowly vocational, and in the commitment that vocational teachers express to specific occupational preparation. Consistent with the dominant school ethos, academic teachers rank academic excellence highest among their priorities and give little emphasis to specific occupational skills. To the extent that academic teachers endorse longer term preparation for adult work, they subsume such preparation under the general rubric of "college preparation." Vocational teachers also place a high priority on academic accomplishments, but retain an emphasis on occupational

[9] Few teachers would deny that teaching is fundamentally a moral enterprise. We—and they—would explain the low mean rating of this 1984 ATS item on the basis that its wording requires teachers to link "moral" dimensions of teaching with explicit reference to religious content.

[10] This analysis aggregates vocational and academic teachers across the five comprehensive high schools. The relatively small N of vocational teachers does not permit analysis by school.

preparation. To confirm the value of their own work, therefore, vocational teachers in these schools express and defend goals and priorities that appear to be at odds with those of the larger institution.[11] Their most promising avenue for doing so lies in the shared value that they and their academic colleagues place on students' academic competence and on student growth in the domains of citizenship, personal maturity, work habits, and interpersonal relations—that is, in arenas that are broadly rather than narrowly connected to the capacities and perspectives that young people bring to adult work.

Table 2

Goal Priorities Among Vocational and Academic Teachers in Five Comprehensive High Schools

Goal Priorities (expressed as means and s.d.)	Vocational Teachers N=30	Academic Teachers N=177
Academic excellence	4.80 (1.00)	5.17 (0.83)
Basic skills/literacy	4.67 (1.12)	4.83 (1.19)
Good work habits	5.37 (0.76)	4.97 (0.93)
Specific occupational skills	4.90 (1.24)	2.85 (1.42)
Citizenship	4.37 (1.22)	4.38 (1.31)
Human relations skills	4.77 (1.14)	4.54 (1.35)
Moral or religious values	3.10 (1.32)	3.24 (1.40)
Personal growth/fulfillment	4.67 (1.27)	4.57 (1.21)

Range 1 ("no emphasis") to 6 ("heavy emphasis")

[11] In one major study of high schools, vocational education is described as a "specialty shop," distinguished in part by goals linked firmly to job training and job placement (Powell, Farrar, & Cohen, 1985). Vocational teachers are said to derive enhanced satisfaction from singleness of purpose and from a student population dedicated to preparing for work following high school. The "specialty shop" view, as presented in that study, owes a great deal to interviews with teachers in schools or centers with clear vocational missions. But it is not a view that squares well with the accounts offered by most of the teachers in our comprehensive high schools.

The "Erosion of Dignity"

The legitimacy dilemma that vocational teachers express is captured well in an individual teacher's story. Ed Gordon was recruited to Esperanza High School in the late 1970s to develop a woodworking facility at the school. Now he teaches a part-time assignment in wood shop and fills the rest of his workload with non-teaching responsibilities. The value of his own expertise is apparent to him whenever he turns his gaze outside the school. For many years, Gordon has earned substantial extra income by contracting for home remodeling jobs. At school, too, he is frequently asked by administrators or colleagues to help with construction or repair projects. He observes,

> When you look at our economy, you look at the buildings and trades industry, the do-it-yourself industry. The biggest stores in town are lumber yards and Home Depot and Home Club. And you look at the values in home maintenance and real estate. And you look at auto mechanics, and everybody needs a car. (ES030)

Inside the school walls, however, his experience is different: "There's been a real erosion of dignity with vocational education. . . . I'm told indirectly with messages that this subject matter doesn't have value." Gordon is diminished when his courses "don't count." Virtually all the industrial arts teachers commented on the fact that fine arts classes count toward college admission and "practical arts" classes rarely do. Gordon is not alone when he comments:

> I think the glaring thing is the UC requirements where they will accept two years of fine arts as an entrance requirement but applied arts is nothing. . . . My class in wood shop has twice the value, I think, of a course in exploratory art. Art counts, wood doesn't. And I just don't get it. It's too big a segment of our economy. . . . Business is losing numbers, too, because their classes don't count, either. They count just as a fill-in elective.

> [It] affects me personally, the way I think about myself. And I feel it really shortchanges a lot of students. I know that it has value and I reconcile that with myself. I know it has value because I make money doing it. I can make a lot of money remodeling kitchens. And I hire some students at $10 an hour to help me. So I want their skills to be recognized. And I pay them for it. (ES030)

Dignity is a recurrent theme in Ed Gordon's account; he appeals for conditions that accord dignity to the vocational subject matter, to the expertise of those who teach, and to the aspirations of those who take vocational courses. He is not alone. Even when

professing that they "love their work" and "love their students," many of these vocational teachers are engaged in a continuous campaign to establish the worth of their programs.

The Campaign for Legitimacy

Academics will support themselves.
Academics is the kind of thing that parents want.
Academics is supported by the college-university regents.

Basically, that's what you go to school for,
reading, writing, arithmetic.
Whoever said, reading, writing, arithmetic, and wood?
(Roger Townsend, ES043)

Roger Townsend teaches drafting. Like his colleagues in other vocational departments, he lives in a world in which academics are the most prized subjects and academically successful students the most prized clientele.[12] Whatever their love of their own subject, and however impassioned their insistence that practical competence be valued, vocational teachers are not immune to the institutional ethos that places academic achievement above practical accomplishments. They recount the ways in which academics take pride of place—in the official pronouncements of the school; in the subtle and not-so-subtle ways in which they are treated; and in the allocation of time, space, and material resources. Two aspects of the "competition with academics" stand out: vocational teachers' struggle to make their elective offerings count, and vocational departments' struggle to win a sufficient share of school resources.

Vocational teachers have constructed two principal grounds on which they justify their goals and curricula to students, parents, counselors, and administrators. In the first of these arguments, teachers campaign to establish vocational and practical studies among the basics of schooling for *all* students; their words are reminiscent of the "manual arts training" movement of the last century or the "life skills" and "life adjustment" proponents of several decades ago. In the second argument, teachers lay claim to a particular share of

12 There are other recognized and valued high status arenas as well, revolving around athletics and other student activities. However, there is a large overlap between the students and the teachers who find recognition in the academic competition and in other domains of student success. Eckert (1989), in *Jocks and Burnouts*, chronicles the overlap from the perspective of students. Our data suggests that there are also parallels in the experience of teachers. While it is therefore true that academic performance does not consistute the only basis for prestige for students and teachers, it is also generally true that vocational education is not prominently represented in any of the high status arenas.

the student market, declaring that vocational preparation has special import for the "non-college bound."

Defining Vocational Studies as "Basic"

Vocational teachers argue for a conception of "basic skills" and "essential knowledge" that is broad enough to encompass hand as well as mind. In this argument, they urge a combination of academic and life skills preparation. Adult life, they protest, will be made more satisfying and successful by virtue of the practice-oriented perspectives, knowledge, and skills they supply.

The "specific occupational skills" that vocational teachers endorse in the survey measures thus do not adequately capture the teachers' conception of a vocational curriculum as they would prefer to see it developed in a comprehensive high school. Such a measure serves to distinguish a certain goal profile for vocational teachers, setting them apart from their academic colleagues with respect to the more narrowly conceived elements of vocational preparation. But the goal of teaching specific occupational skills turns out to be a rather crude proxy for the domain that vocational teachers carve out among the various purposes of secondary schooling. Although vocational teachers (especially those in industrial arts, business, and agriculture) do emphasize the saleable skills they introduce, they also disagree among themselves about the appropriate nature and extent of skill training. Greta Royce at Onyx Ridge prides herself on having abandoned "stitch and stir" coursework in home economics for a program concentrated on child development and early childhood education. And Hannah Naftigal's most fond memory, as she looks back over her years in teaching, is of a child development program she initiated:

> Training them in child development and child care and actually really trying to prepare them for a career in nursery schools, nursery school aides, and hopefully some of them would want to go on and become nursery school teachers or administrators. (RA066)

Those teachers who maintain purposes that are predominantly vocational in nature are outnumbered by colleagues who have tempered their vocational goals. Here, an auto shop teacher describes his dispute with a colleague in another high school:

> There's a philosophical difference between Sam and I. And the philosophical difference is that he emphasizes teaching auto to people who want to be mechanics. And my philosophy has been that this isn't the place for skill-training because we have fifty-minute classes. . . . I would rather

> teach the class so that I could raise the level of everybody's auto knowledge so they can work on their own car if they choose to or be a better consumer. . . . The underlying philosophy is, it's for everybody.
>
> Over there [Sam] convinced the administration to have two-hour blocks and he had the students in there and he had twenty crank-shafts and they were measuring the crank shaft and going through an elaborate evaluation like you would if you were an automotive machinist. Now most mechanics don't even bother with crank shafts, they send them out to a shop. They do the assembly and the disassembly and the cleaning, but they send the machine work out, and I don't see the value of teaching an intensive skill like that. (Elmer Young, RA027)

In these comprehensive high schools, we found more instances of Mr. Young than his colleague Sam. Most teachers, on the whole, expand their preferred domain beyond narrowly conceived skills; echoing the principles of the manual training movement of decades past, and present advocates of integrated academic and vocational education, they contend that all students would benefit from the concepts and skills their courses offer. A wood shop teacher scoffs at the helplessness with which many college-educated adults greet basic mechanical tasks: "They have to pay people like me to do the simplest things."

When discussing their priorities in interviews, these teachers often talk less about the occupational aspects of their curricula than about the practical. Auto shop teachers say that they prepare students not only—or primarily—to work in the auto industry, but also to maintain their own cars. Home economics (or consumer/family studies) teachers prepare students for work in fashion merchandising, early childhood education, or restaurant management, but they also prepare astute consumers and informed parents. Wood shop teachers concentrate on basic home maintenance skills or facility with tools. Virtually all of these teachers invoked "preparation for life," "life skills," or an image of the "informed consumer" as a way of describing the contributions they made to student learning. (The exchange shown in Figure 2 captures their view.) The auto shop teacher at Oak Valley describes Auto I in this fashion:

> Auto I is just, here's a little bit about the owner-operator, you know. So they can be a good consumer, how to buy cars and parts, be able to maintain your car, change tires, those kinds of things. Which they used to know but now they don't. At the Auto II level I'm trying to interest them a little more about careers, getting them prepared for some vocational. Usually the vocational classes don't exist. They're on paper. (OV046)

Figure 2

Scenario: Dilemmas Surrounding Goals and Purposes

"Sometimes I'm torn between the kind of class that I think a college prep student would need, which would probably center around basic skills and home maintenance and car maintenance and just general knowledge of how machinery works . . .

And then I'm torn between that and the true vocational education which is to get kids skill-oriented so that they are ready for job entry . . .

I think I'd like to attract more college-bound kids and give them some confidence in those areas where they don't have any, leaving the true vocational program to the vocational centers that are nearby. I like the idea of teaching prevocational skills."

"If you could rename the course, what would you name it?"

"Life skills."

Specific vocational preparation in Tom Lawrence's auto shop, it appears, takes place less in organized classes than on an individual tutorial basis between Mr. Lawrence and those few students who "come in a lot" before and after school. At Onyx Ridge, Mr. Fuhrmann takes great pleasure in enumerating the awards his students have won in design competitions, and in reporting instances of successful job placement. While we are conducting our interview, the phone rings to confirm that one of his advanced students has been hired by one of the city's major printing firms. Yet Fuhrmann predicts that no more than two percent of the students in his popular graphics arts class will make their living in this field, though others will use their skills for part-time employment during high school and college.

Vocational perspectives thus turn out to encompass a broad combination of work and life skills. In part, this broad and diffuse view is characteristic of secondary schooling at large and arises out of teachers' sense that they must respond to the multiple expectations held out by a public. It is also generated in part by the experience of being an adult whose work life is bound up with the lives of maturing adolescents:

> It's probably not too realistic to be like outside industry. I have a neighbor that has a very successful auto, private, independent shop and we have different focuses there. The outside shop is there to produce the product and get the car out the most accurate and least expensive way they can. . . . And here the humans are our product. So I don't get hung up with whether or not I've got the latest technology and equipment. (RA027)

Teachers' broad practical view takes two forms. First, it can be seen in the way individual teachers adjust the content of traditional vocational courses to accommodate a range of curricular aims. Audrey Cummings at Valley justifies her child development course as preparation for parenting: "I'd say that everybody should take a course in child development in high school years. Most of us will be parents. Very few people get any type of training to be a parent." Olivia Henry, the chair of the consumer/family studies department at Oak Valley, is insistent about providing appropriate preparation for positions in child care occupations, saying that she does not hand out certificates indiscriminately, but she also stresses that the main virtue of her program may be its preparation for parenting:

> I: You mentioned a few minutes ago, "Don't tell ROP, but my goal is . . . to make people better care givers." Talk for a minute about what your priorities are with your students. What are you usually trying to achieve?
>
> T: I guess a better understanding of the child development process. That would cure a lot of ills! And how children learn. And it can transform them into the field of teaching or just being able to select the best possible program for their own children. If ROP were to ask me, [preparing them for a job] is what I would say! And I feel I am preparing them for that. But I am realistic enough to know they're not all going to go into it. (OV067)

Throughout, vocational teachers refer to their courses as supplying the basics of what students should know before leaving school. In one formulation, practical skills ranging from typing to basic auto maintenance take their place alongside academic skills of writing and computing as components of a "general education." A business teacher argues on behalf of typing, auto mechanics, and other topics as legitimate subjects of study:

> I know if I was a parent, I would want my kids to take as many academic courses as they could, but I would also want them to take typing. And I might like them to take band if they were good at that. Possibly, child care and auto mechanics, I think they all have a place. . . . And unfortunately, they don't have a lot of time because it's state requirements that you take [academics]. And yet I think they're missing out by not taking certain subjects. (OV088)

The broad practical orientation is also evident in the entire configuration of courses offered by individual departments. In Olivia Henry's department at Oak Valley, we find a combination of courses that signal potential vocational interests (e.g., fashion merchandising), together with general electives that rely upon a broad life skills orientation (e.g., "Single Survival"). This pattern is characteristic of half of the mainstream vocational departments we studied, accounts overall for about one-fifth of all class sections, and occurs with some regularity in four of the five schools. This figure is conservative, inasmuch as it treats as vocational all computer classes offered by the five business departments.

Vocational teachers argue for the intrinsic value of their curricula for all students. The virtues of the industrial or practical arts, they maintain, are undermined by the prevailing structure of university admission requirements and by graduation requirements that press students and counselors toward courses that grant academic credit.[13] Note that these vocational teachers do not dispute whether all young people should be academically capable--but rather whether intellectual rigor should be equated with or reserved for a college preparatory curriculum, and whether technical and mechanical capacities should be equated with and reserved for those not likely to attend college.

Among the recommendations that vocational teachers offer, then, are those that would elevate the status of the vocational curriculum by offering academic credit for specific courses. Regarding a comparable set of dynamics surrounding the "hegemony of the competitive academic curriculum" in Australian secondary schools, Connell (1985) writes,

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[13] Throughout our three years' field work, vocational teachers returned again and again to the conservative force of the university admission requirements. They argue that the University of California's "a-f requirements" operate to inhibit curriculum innovation and to constrain student choice. The a-f requirements to which they refer specify coursework requirements in U.S. history, English, mathematics, laboratory science, foreign language, and other "college preparatory electives" that may include visual and performing arts (but not practical arts or courses typically encompassed under the heading of vocational education).

> Marginalised curricula can gain space, status and resources in the schools by redefining themselves as part of the hegemonic curriculum. . . . The pressure on a marginalised subject to attempt this can be quite serious. (p. 98)

In these schools, too, teachers seek names for their courses of study that link them to legitimated academic disciplines. Home economics, in three of our five schools, is "Consumer/Family Studies." Others look to the designation of specific courses with academic content and targeted to "academic" students. Roger Townsend says,

> What I would like to have happen, I would like to have one of the metal shops, one of the wood shops identified as an academic class . . . . And the idea in that class is that you're going to not only teach how to use the machines and working with your hands and developing something, but you're going to teach problem solving and you're going to teach metallurgy and you're going to teach some things that require brain-power and some interconnection with math and science and that stuff. (ES043)

Indeed, this year Townsend has developed a course titled "Engineering Science Technology" and has fought to obtain science credit for it. At the same time, he expresses a certain resistance to becoming absorbed by the academic curriculum. The reasons for his resistance—whether his disdain for "academic" approaches to subject matter, or his loyal opposition to an academic hierarchy—are not entirely clear. But Townsend protests that

> They want me to throw out the word technology and call it engineering science. And the reason they want us to do that is so they can get college credit for it . . . . They want me to become a science teacher and I refuse to do that. I don't want to be a science teacher. I want engineering science to be part of my drawing card to get kids back into drafting and engineering. (ES043)

Vocational teachers themselves seem doubtful that they will be successful in establishing their courses among the basics required for high school graduation or college admission. The University of California's "a-f" coursework requirements leave little room or incentive for electives considered "non-academic." Further, the "basics" argument stands in marked contrast to realities of student placement that make vocational classes "a refuge for the slow learner." Present high school graduation requirements and university admission requirements make it unlikely that enrollment in conventional vocational classes will increase measurably. One teacher speaks for many:

> It hasn't helped, increasing the graduation requirements. Not that I'm totally against that, but I just wish that maybe we could count for

> something. I think it would make a difference. Even if the kid goes on to college—and I know it's a small percentage and I don't believe their statistics, not for a minute—but anyway, you still need something to get you through college. So if you can pick up some sort of skill like I did—I knew how to teach pre-school—you can go on to bigger and better things, even director, owner, manager, in a college program, whatever. But you're at least getting your basic skills somewhere in high school. (OV067)

But among college aspirants or those who counsel them, "picking up a skill" does not compete well with other priorities—picking up another year of a foreign language, or an additional English course, or a fourth year of science. It is this reality, one that teachers both acknowledge and disparage, that leads them to pursue the second form of campaign to secure their programs and establish legitimacy of their aims. The tale told by this business teacher at Esperanza is not uncommon:

> When I came here to Esperanza, the parents had college educations, that's where the kids were all going. Now there's been a big shift and our focus is [still] that everyone is going to UC and we're shaking our heads and saying "let's get real here." (ES024F)

Vocational Studies for the Non-College Bound Student

External pressures and internal tradition combine to concentrate resources on academics and on those extracurricular offerings deemed important for a college bound population. We would expect to find those programs that are not explicit contributors to high rates of college attendance to be at a substantial disadvantage in the competition over symbolic regard and material resources. A second set of claims for the legitimacy of vocational education is founded not on needs or interests common to all students, but on what teachers consider to be differences in students' abilities and probable futures. In this argument, vocational teachers defend their niche in the school by disputing the dominance of the college-bound orientation.

Teachers reinforced the view we heard expressed by principals: The comprehensive high schools place a premium on college attendance. But teachers are divided about the appropriateness of the single-minded emphasis on college:

> I don't think there is a true understanding of the people that are making the decisions about what is really needed by students to be successful in the work force. . . . thirty to forty percent of the students are never going to go to college and we need to do something to train these students more effectively so that it does in fact change the climate of our citizenry overall. (ES053)

For those students who are interested and who are non-college bound, vocational teachers claim to provide early-stage preparation in a particular field of work. In this argument, they place less emphasis on the basics that "all kids need" than upon the specialized knowledge, skills, and dispositions thought essential for immediate entry into the work force. In this, they come closer to maintaining a vocational skills orientation and to protesting the need for specific technical skills.

Vocational teachers sometimes chafe at being treated as the "refuge for the slow learner," or as a "dumping ground" for students rejected by the academic teachers. At the same time, they steadfastly lay claim to the right to construct an intensive program dedicated to students who seem unlikely to enter a four-year college or university immediately following high school. A crucial stratagem of this campaign is to dispute official figures regarding college enrollments and college completion. The vocational teachers routinely challenge the official claims regarding college attendance, and the dedication of the high school curriculum to college-oriented study. Many believe that students themselves are shortchanged by efforts to keep students in traditional academic classes who might better thrive elsewhere. When Ed Gordon complained of the "erosion of dignity," he included students among those damaged by the tendency to accord value only to those headed for college:

> We have eighty percent of the kids in this school who will not go to college. And the more skills they have, the better employment they'll have. And yet we don't give that eighty percent any dignity about it. We have everything directed toward the college goal and college attainment. And anything that's resembling vocational skills, be it business or industrial arts or home ec or anything like that, it's just a fill-in. It doesn't really count. (ES030)

Vocational teachers argue for the legitimacy of a non-college bound course of study in the high school, and for the attention due the student who elects such a course. We found ourselves, more often than not, in the company of educators who were advocates of a differentiated program in the high school—a clearly defined program of academic study for some, and a clearly defined program of work preparation for others. The premise most often heard was one of decided futures, of differential interests and abilities—that some students were by talent or inclination not adequate to the serious contemplation of academic topics. Teachers believed that the students they taught brought with them different abilities, different dispositions toward learning (and toward work), and were destined for quite different futures well before they came to high school. Despite the ambivalence that

principal Elaine Eddy expresses over tracking and prematurely closed options, most teachers would be ready to consider certain basic choices already made.

The vocational teachers' dual campaign to establish the legitimacy of their goals and their curricula challenges two aspects of the present status hierarchy in the secondary curriculum: (1) assumptions regarding the desirable core curriculum for all students, or what is basic in secondary schooling; and (2) assumptions regarding an appropriate curriculum for those students likely to enter the workforce soon after high school. These arguments are not, in fact, entirely compatible. The first bids for the general utility of vocational and practical coursework for all students; the second reserves vocational education for the non-college bound student.

In both substantive and pragmatic terms, teachers appear to weaken their case when they express the practical basics as a list of additional school subjects or as a repertoire of technical skills that range from handling a hammer to balancing a checkbook. Framed in this manner, the vocational perspective underscores and even celebrates a distinction between the abstract and the concrete, between theoretical and practical knowledge. A home economics teacher records precisely these distinctions:

> I love practicality. I love anything that's practical. So it's really delightful to be able to work with students and teach them things that you can see them using immediately. It's not theory. It's hands on and it's something that you know that they can use. (RA066)

But in the competition to control the scarce currency of time and course credit in the high school curriculum, such claims are unlikely to compel much attention except as an accommodation to students considered to have special needs. Academic teachers consider other capacities even more basic, more essential to students' future life chances, and more difficult to learn outside of school; abstract reasoning, they would argue, is one of them.

A form of the practicality argument more likely to hold sway with academic teachers, administrators, parents, and policymakers links participation in practical problem-solving with cognitive understanding and intellectual growth. To the extent that we heard this form of argument expressed by vocational teachers, it was generally expressed as a disposition to stress process over skill content, thinking skills over manual skills. Ed Gordon says he concentrates on offering "knowledge of material and processes. . . . I think the main thing I teach is an organizational thought process. Wood is just a medium, it

could be anything else. . . . I build things and I conceptualize them three times in my head before I do it." Roger Townsend, a drafting teacher, objects that students have a certain formulaic grasp of simple math, but no sense of when or how it might be used: "And what, to me, that says is we're not teaching thinking skills, we're teaching memorizing and regurgitating and success through that. And what we try to teach in industrial education and I think in business, too, is thinking skills."

The stronger form of practicality defense harks back to Dewey's (1916/1966) arguments on the nature of intellectual and practical studies, and on broad rather than narrow conceptions of vocational preparation. It is also an argument with growing support in the field of cognitive science. And it is one that holds a certain natural appeal for many academic teachers, and thus holds out the possibility of interdisciplinary curricula. Yet this basics argument—one that links practical arts and experiential problem solving to intellectual growth—is heard relatively rarely from vocational teachers. For every vocational teacher in our sample who stresses the critical thinking aspects of the vocational curriculum, there are two who cast goals and methods in far more narrow terms (as a repertoire of practical skills), and who underscore a distinction between theoretical and practical knowledge. Those who describe the infusion of academic content in their classes tend to concentrate their examples on only the most rudimentary academic concepts and skills (e.g., measurement skills in wood shop classes).

Undoubtedly, vocational teachers who stress the problem-solving and critical thinking aspects of their work could find like-minded allies among those administrators, academic teachers, and outside observers who have begun to press for livelier teaching, a more robust mix of subjects, and teaching methods that provide students with a more authentic array of complex problems and circumstances. On the basis of our own observations, however, we would be hard pressed to believe that the vocational classroom in comprehensive high schools, as presently constituted, regularly supplies such conditions, or that it does so with any greater frequency than one might find in academic courses (e.g., social studies teachers who engage students in elaborate simulations, or geometry teachers who use innovative computer software or manipulatives to introduce new concepts). Some of the reasons, as teachers experience them, stem from both internal and external pressures on curriculum and pedagogy.

CONTENT AND CLIENTELE

The history of debates over schooling in the United States, according to curriculum theorists, is reflected in the shifting composition of the high school curriculum. Course configurations serve as an indication of the institutional value attached to specific educational purposes. Throughout the 1980s, the thrust of reform was centered on "recapturing the school day for academics" (Toch, 1991, p. 100, citing H. Ross Perot). In these California high schools, then, it is not surprising to find a surge in new academic course titles and a corresponding decline in vocational programs and in other courses considered non-academic. A shift in curriculum standards, graduation requirements, and university admission criteria has led to the steady narrowing of elective offerings. In all five comprehensive schools, shop classrooms have been converted to other uses and programs have been eliminated. It is not uncommon for vocational teachers to hold only part-time assignments in their areas of specialization, or to teach in more than one school. Teachers who retire are not replaced.

Patterns of Decline: Staffing, Courses of Study, and Student Enrollment

Among the main indicators of the value attached to vocational offerings, we examined: (1) the availability and actual assignment of vocational specialist teachers, (2) the availability of designated and sequenced course offerings that bear credit for purposes of high school graduation or college admission, and (3) the size and character of the student population enrolled in vocational classes. Each presents a picture that could only be seen as both challenging and discouraging for most vocational teachers.

Steady Declines in Staffing

Vocational teachers are a disappearing breed in these schools. Table 3 shows the staffing configuration across the five schools for a three year period. The pattern across the five schools shows a steady record of decline in total numbers and in full-time assignment of vocational specialists. Most resilient have been the home economics (or consumer/family studies) and business departments; most diminished have been the trades-oriented industrial arts departments. A dual pattern emerges. Increasingly, teachers preserve full-time teaching assignments by teaching out of their primary subject area, or by

converting traditional courses to serve the purposes of basic skills instruction in academic areas. Departments maintain teaching positions by developing a marketable combination of vocational courses and courses that might be termed "personal interest electives."

Table 3
Staffing of Vocational Programs in Five Comprehensive High Schools Over a Three-Year Period

	'88-'89	'89-'90	'90-'91
Total	**51**	**45**	**41** (80% of Yr 1)
Full time	39 (76% full-time)	34	29 (71% full-time)
Part time	12	11	12
Business	**17**	**15**	**15** (88% of Yr 1)
Full time	15 (88% full-time)	13	11 (73% full-time)
Part time	2	2	4
Cons/family (home ec)	**12**	**12**	**11** (92% of Yr 1)
Full time	10 (83% full-time)	9	9 (82% full-time)
Part time	2	3	2
Industrial arts	**19**	**15**	**13** (68% of Yr 1)
Full time	12 (63% full-time)	12	8 (62% full-time)
Part time	7	3	5
Vocational agric.	**2**	**2**	**2** (100% of Yr 1)
Full time	2 (100% full-time*)	2	2 (100% full-time)
Part time	0	0	0

* This figure represents two teachers who have full-time assignments in vocational agriculture, though one of them teaches a split assignment in two achools. From the standpoint of teaching assignment, that teacher is full-time; from the standpoint of an available program in each school, he is part-time.

Program declines place vocational teachers in a precarious position, forcing them to accept or seek split assignments across departments or schools, or to take on special out-of-classroom assignments at the school level. Such programmatic shifts also place difficult demands on schools which, bound by state credentialing and assignment laws and by locally negotiated contracts honoring tenure and seniority, may be hard-pressed to place vocational teachers in classes they are both authorized and entitled to teach. By the third year of our study, ten teachers who had been teaching vocational classes were teaching remedial classes in academic departments (e.g., basic math) or courses in other non-academic departments (health or physical education). Others were teaching newly created electives that satisfy student interest without being visibly consistent with a departmental vocational orientation such as multiple sections of Photography 1. Olive Roark, a business teacher, found herself assigned to teach classes in English for ESL students:

> It was indicated to me at the end of one school year that I might have to teach [ESL] and then they kept saying, "Oh, no, things will be okay. You probably won't."
>
> Until about the week before school started. And then they had given me four preps, two new ones with ESL students. (ES066)

The five schools vary considerably in their reliance on cross-over assignments, though all are constrained by the same set of state credentialing and teacher assignment regulations. Oak Valley is distinguished from the other schools by the large proportion of full-time membership in departments. Only four (3%) of the school's regular classroom teachers teach across departments (three members of the math department also teach Physical Education and coach). Until recently, this same pattern applied in the vocational departments. Now, Oak Valley's pattern has been disrupted by shifts in student enrollment and course requests, resulting in program cuts and split assignments for the industrial arts department. Of the six teachers affiliated with industrial arts in 1990-1991, one teacher remains without a regular class assignment altogether, while two others have been assigned to teach health or lower-level sections of math.

Onyx Ridge, in contrast, has a more extensive pattern of cross-department teaching that affects both the academic and vocational teachers. Eleven of Onyx Ridge's fifty regular classroom teachers (22%) were teaching across areas in 1989-1990; of those, four were teachers of science, math, or English who spent the last period of the day coaching. The remaining seven were combining subject areas: math with industrial arts; English with

art, business, music, health, or foreign language. For some teachers, such mixed assignments no doubt serve as a valued source of intellectual stimulation and variety. Frank Leonard at Rancho High School likes teaching both drafting and geometry "because it's enough variety—it's enough of a switch so that it makes both areas fresh for me." For others, like wood shop teacher George Sanford, a split assignment does not serve such a purpose. Sanford also teaches three periods of math, but does not enjoy the same depth of knowledge in mathematics that he does in cabinetry; nor does he gain the same emotional and aesthetic pleasure from math. He teaches differently, he says, though he does not elaborate on what that means. Others who have studied comparable situations report that teachers who are ill prepared for the subject they are assigned to teach tend to place greater reliance on textbooks, offer a narrower range of examples and explanations, substitute affective and social goals for academic goals, and display less genuine comfort in their teaching (e.g., see Sedlak, 1986, pp. 100-101; Ball & Lacey, 1984, p. 236).

But the full nature and extent of cross-over teaching is difficult to detect. It is clearly evident in cases where course titles fall in traditional categories, as when Frank Leonard is shown to teach three periods of geometry. The problems of teacher (mis)assignment are far less clear in cases where the course title appears to lie within the major specialization of the teacher, and therefore may mask a re-ordering of course content. Thus, it is something of a surprise to learn that recordkeeping, taught in one school's business department, receives math credit and is considered "about the lowest level math course the school has to offer."

Reduced Course Offerings

The decline in teaching staff is matched by a decline in the number of course offerings, and a shift in the types of courses available.[14] The curriculum of the vocational specializations, as recorded in course titles, is not recognizably "vocational," though it is consistent with the "life skills" orientation expressed by many of the teachers. At the beginning of our study, all five of the schools offered fewer vocational courses than their staffing permitted. That is, teachers whose background and experience lay in industrial arts, business, agriculture, or home economics were teaching fewer than five periods a day

[14] The parallel between staff reductions and program cuts may seem axiomatic, but in fact is not. In a case study report titled "Are core academics the dumping ground of teacher misassignment?" Gehrke and Sheffield (1985) observe that in times of declining enrollment, academic courses are maintained through "misassignment," while courses requiring special technical skill (e.g., instrumental music, wood shop) are cut from the school program altogether.

in those areas. Over the three year period, all schools reduced the total number of offerings still further. The description offered by this industrial arts teacher typifies the developments in the five schools:

> When I first got involved in the department here, we were actually a growing and expanding department. We built Small Engines. We built the Photo program since I've been in the department. And at that time we felt real positive about what we were doing. We had more students enrolling who were requesting our programs than we could accommodate . . . ten years ago. . . . We had six areas in our department that were teaching five periods, which is a normal load, plus we had two periods of auto shop in the morning before school, starting at 5:30 in the morning—ROP Auto. We had ROP Auto in the afternoon for two hours. We had ROP Small Engines one hour period in the morning. We had ROP Welding and Flame Cutting one period in the morning—this is all before school. So this was all outside of the school day and now we're contracted down to the point that none of us are really teaching outside of the school day. . . . And for next year, we've been told that we are essentially losing two teaching positions out of our department. (OV059)

Tables 4 and 5 display the extent to which the three main vocational departments concentrate on courses that appear to promise occupational links. These tables displays each department's ability to devote its teaching resources to course offerings within the department's area of specialization. Table 4 expresses program "saturation" as the number and percentage of class sections in vocational departments that are devoted to classes with an explicit occupational orientation, as distinct from class sections that are employed for other uses. (Calculations are based on the assumption that a full-time teaching load is five periods; thus, a fully saturated program would be five times the number of teachers.) Table 5 shows the actual configuration of courses and other assignments for vocational teachers. In labeling these courses, we have been liberal in assuming potential ties to future work where they are signaled by a course title and by the availability of a course sequence. Auto I at Oak Valley is therefore counted as a vocational class despite the auto shop teacher's caveats regarding its orientation toward the owner-operator. Recordkeeping is considered vocational despite our discovery that it is sometimes devoted to remedial math. The five sections of Photo I that have replaced drafting at Oak Valley, however, have all been considered general purpose electives. In Consumer/Family Studies, we consider a state-supported program in fashion merchandising to be occupational, but classify Single Survival and Foods for Two as general purpose electives.

Table 4

Program Saturation: Concentration of Vocational Courses in Selected Vocational Departments in Five Comprehensive High Schools*

	Oak Valley	Onyx Ridge	Valley	Esperanza	Rancho
All depts.					
Year 1	68/80 (85%)	17/30 (57%)	34/40 (85%)	33/40 (83%)	37/45 (82%)
Year 2	62/80 (78%)	14/25 (56%)	26/40 (65%)	19/30 (63%)	27/35 (77%)
Year 3	49/70 (70%)	13/25 (52%)	32/35 (91%)	27/40 (68%)	23/35 (66%)
Business					
Year 1	93%	100%	93%	85%	90%
Year 3	92%	100%	100%	64%	100%
Cons/family					
Year 1	100%	90%	80%	50%	100%
Year 3	100%	90%	80%	100%	100%
Indust. arts					
Year 1	93%	80%	100%	87%	70%
Year 3	56%	70%	100%	40%	53%

* Saturation is defined as the percent of a department's available class sections devoted to vocational offerings; complete "saturation" would be represented by the number of assigned staff multiplied by five (class periods).

Table 5

Course Configuration in Three Vocational Areas in Five Comprehensive High Schools, 1990-1991

Course offerings	Oak Valley	Onyx Ridge	Valley	Esperanza	Rancho
Overall					
Total sections available	70	25	35	40	35
Vocational sections	49	13	32	27	23
Personal interest electives	9	8	0	3	6
Out-of-subject assignments	5	3	0	3	3
Non-teaching assignments*	7	1	3	7	3
Business					
Total sections available	25	5	10	20	10
Vocational sections	23**	5	10	15	10
Personal interest electives	0	0	0	0	0
Out-of-subject assignments	0	0	0	3	0
Non-teaching assignments	2	0	0	2	0
Home economics					
Total sections available	15	9	12	5	10
Vocational sections	11	4	10	0	5
Personal interest electives	4	5	2	5	5
Out-of-subject assignments	0	0	0	0	0
Non-teaching assignments	0	0	0	0	0
Industrial arts					
Total sections available	30	10	10	10	15
Vocational courses	15	7	10	8	8
Personal interest electives	5	0	0	2	1
Out-of-subject assignments	5	3	0	0	3
Non-teaching assignments	5	0	0	0	3

* Includes split school assignments at Esperanza and Rancho.

** Includes four sections of consumer math and two sections of business math.

We recognize that such distinctions are problematic in two ways. First, they perpetuate a dichotomous view of the secondary curriculum. If we pursue the claim that meaningful links to adult work and to other genuine out-of-school problem-solving would profitably be evident in *all* courses of study, then it is not helpful to maintain old distinctions here. The present configuration of course titles in vocational departments may, in fact, help to break down rigid and unproductive boundaries among subjects and purposes. Certainly the erosion of subject boundaries and departmental structures is consistent with some of the recent reform recommendations, most notably those guiding the Coalition of Essential Schools. It is perhaps worth considering the affirmative possibilities that are suggested by the present configuration of vocational courses. However, our evidence does not support the view that vocational departments are self-consciously pursuing such an integrative strategy in reconfiguring their course offerings; rather, most are pursuing whatever strategies will be necessary to maintain course enrollments and teaching positions. Nor does our evidence suggest that the vocational teachers are in the best strategic position to pursue such a cause were they inclined to do so (see Little, forthcoming).

Second, the distinctions between occupational and personal interest topics are problematic because they are almost certainly not the ones that teachers themselves would make. Teachers' descriptions of courses rely less on course titles than on an intimate sense of actual course content and clientele. Course titles convey little of the purposes with which a teacher invests a course, or the daily and weekly choices that the teacher makes in shaping content and method. In this instance, we have relied on the superficial message embedded in a course title, reasoning that our estimate of the associated course content would roughly parallel that made in a commonsense way by policymakers or the public (or by any student or parent who remained naive about the "real" definitions of courses). Thus, we have ignored the fact that Introduction to Business is taught in one school as if it were a single survival course, and that Recordkeeping in another operates as a remedial math course, on the grounds that the formal justification for these courses is found in their titles.

Despite these caveats, however, the pattern that emerges is one in which vocational purposes prove difficult to uncover in the set of curricular accommodations that teachers and departments have made to an environment in which most symbolic, material, and human resources are devoted to the academic program.

The Changing Student Clientele

Students are the source of the daily rewards or frustrations teachers experience, and the center of their longer-term pride or despair in teaching. They are, in essence, teachers' most consequential working condition. When asked "What's important for us to understand about you as a teacher here, in this school?" vocational teachers talk often and at length about students. In these as in other case studies of high schools, some teachers speak with enthusiasm and others speak with disdain of the students they teach and of those students' probable futures. Teachers' sense of themselves is in many ways bound up with their views of their students.

These comprehensive high schools present quite different profiles of a student population. Oak Valley, the largest school, is also the most homogeneous. Its population has increased rapidly in size (from fewer than four hundred to three thousand students in thirty years) but has grown more slowly in ethnic and socioeconomic diversity. Esperanza, Rancho, Onyx Ridge, and Valley, by contrast, have experienced dramatic changes in the composition of the student body over a relatively short time. At Rancho and Esperanza, the district's desegregation order in 1986 resulted in rapid and substantial change. Esperanza in particular is experiencing a surge of limited-English speaking Hispanic and Asian students. Valley serves as a regional center for special education, and two of the school's ROP ventures are dedicated entirely to special education students.

In our five comprehensive high schools, student enrollment in non-academic courses has dwindled steadily, though some teachers and programs have fared better than others. At Onyx Ridge High School, academic classes now occupy the cavernous space meant for a metal work shop that was built but never equipped when the school opened in 1982. The auto shop at Onyx Ridge was closed down in the year prior to our study. Among the industrial arts, only graphic arts thrives, sustained in part by an individual teacher's aggressive campaign to recruit students. The Onyx Ridge story is a familiar one among these schools. In the first year of our study (1988-1989), industrial arts teachers at Oak Valley prided themselves on having held their own with a full program of trades-oriented offerings (e.g., auto, metal, wood, electronics, drafting, small engines). Three years later, the small engines and metals programs have been eliminated; the small engines teacher is instructing four periods of health; the drafting teacher is assigned to one period of math foundations and two of introductory photography; and the metal shop instructor, too, cultivates a reputation as a photography teacher. Rancho and Esperanza share a single

vocational agriculture and auto shop teacher, and have seen their other programs eroded course by course, teacher by teacher. Only at Valley has the configuration of offerings remained fundamentally the same over a three year period (though it is smaller than in years past).

Declining numbers give greater urgency to the matters surrounding student clientele. Within schools, the criteria and procedures by which students are placed in courses, or are counseled into or out of specific programs or classes, affect the student encountered by individual teachers. It is not only the composition of the general student population of the school that is crucial here, but the particular fit between student, subject, and teacher. The specific patterns of student placement, and the meaning that teachers and students themselves attach to those placements, affect teachers' daily performance and career commitment. In portraying their students, these teachers also present vivid images of the relative success and satisfaction they find in their teaching. In all five schools, with rare exception, vocational teachers describe a student clientele that is defined less by an affirmative interest in work than by a set of problems and needs associated with failure in academic coursework. (On the dynamics of curriculum differentiation and student placement practices, see also Selvin, Oakes, Hare, Ramsey, & Schoeff [1990].)

Teachers are situated and given identity by their student clientele. Their satisfaction with their work, the sense of craft pride they derive from it, and their sense of what is important are closely linked to the subjects and students they teach. The vocational teachers are especially alert to the composition of their classes. Do they have students who genuinely elect to be there, or who are there as a counselor's last resort? And if students "choose" to be in a vocational class, do they choose on the basis of their interest in preparation for work, or because they believe that is where they will find their friends, or few coursework demands? Do the teachers themselves command the kinds of knowledge and other resources that will make their work with students satisfying? What is the fit between a teacher's own interests and background, and the subjects and students which he or she is asked to teach?

As teachers describe the students they now teach, many struggle to find a point of view that reconciles the loyalties they hold to vocational education with the realities of student placement that they encounter. Three refrains sound again and again: (1) there are no "vocational" students; (2) there are not enough students to go around; and (3) the

students that enroll in vocational classes are increasingly difficult to teach, placing new and often unexpected demands on teachers' knowledge, skill, and confidence.

Through the Teachers' Eyes: Personal Consequences of Program Decline

Present patterns of staffing, course configuration, and student placement generate certain pervasive and problematic conditions for teachers. We describe three of those conditions here:

- The concentration of the low-achieving, special education, and limited-English speaking students in vocational classes, placing special demands on teachers' knowledge, skill, and confidence.
- Course configurations and course sequences that are fragmented or seriously diminished in scope, with a corresponding erosion of vocational aims.
- Instructional assignments that achieve a relatively poor fit with teachers' preparation and preferences.

Teaching the "Low" and the "Special"

Vocational teachers have traditionally carved out a market niche among those secondary school students who, for whatever reasons, have not been included among the college bound. Although the teachers hold mixed views about the ways that students are labeled and categorized, they are inescapably aware of the ways in which the most recent press toward academics has affected the pool of students they teach. That pool has been reduced in number and changed in character; the impression that vocational teachers are dwelling among the low and the special is so nearly uniform that the exceptions are almost startling. Teachers attribute the changes in their own classes less to changes in the student population at large than to narrowly defined graduation requirements and to the admission requirements for the state's universities:

> The most recent blow, I think, that was a real dramatic thing, was the State University system implemented admission requirements. So now they require students to have what they call "a-f requirements"—similar to the UC system. The mathematics, science, two years of a foreign language, and so on and so forth. We used to get a lot of students who were headed

> for the State University system because prior to that if they walked out of high school with a 2.50 grade average they could enroll in the Cal State system and be accepted. Now they have to have all this coursework, so while they're going through the system here, if they indicate on their preregistration form to their counselor that they're interested in going to a four-year college, the counselor now must tell them, "Well, gee, you need to be in this sequence of courses." And it leaves them just absolutely no elective courses to take things like vocational classes. I think that's been kind of a final blow to us. (ES030)

The vocational courses in each of our five schools were home primarily to those students who, for a variety of reasons, were excluded from (or opted out of) what has been termed the "competitive academic curriculum" of the comprehensive high school.[15] As one teacher summed up, "If they're not college material, we get them." In the eyes of most teachers, the nature of students considered "not college material" has changed as schools have encouraged a greater range of students to aspire toward higher education. Most vocational teachers with whom we spoke described the students who fill their own classes as "nice kids" who are (1) experiencing substantial difficulty in academic classes, (2) oriented neither toward higher education *nor* a specific occupation, or (3) hampered by special obstacles to learning that range from a limited command of spoken and written English to physical, mental, or emotional disabilities. There were some notable exceptions. Graphics arts classes at Onyx Ridge, for example, attract students from a wide range of academic niches and levels in the school, from those enrolled in Advanced Placement classes to those who plan to join the military after high school. The teachers of early childhood education programs at Oak Valley and Onyx Ridge say they are reasonably successful at attracting students with a genuine interest in teaching young children. At Valley, which is home to a regional special education center, two ROP programs specialize in preparing special education students for specific jobs in food service and industrial cleaning establishments. For those teachers, the program's aims and the student clientele achieve a fit. Many vocational teachers, however, explain that the courses they teach are designated as "low-level" classes aimed at supplying basic skills instruction to the school's lowest-achieving students. The hands-on orientation of most vocational classes is considered a vehicle for maintaining interest (and enrollment) of students not otherwise engaged by schoolwork.

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15 For extensive discussion of the "competitive academic curriculum" and its consequences, see Connell, Ashenden, Kessler, and Dowsett (1983) and Connell (1985).

The Dumping Ground Syndrome

Teachers chart the ebb and flow of "good students." In the three years of this study, vocational teachers at all five of these schools lamented a perceived increase in "dumping ground" placements; they believe themselves to be enjoying fewer and fewer of the student resources the schools have to offer. George Sanford, a wood shop teacher, started his interview by summing up, "Work is frustrating now. That wasn't always the case. . . . The mix of kids was more motivating." Vita Grant, a home economics teacher with thirty-two years experience teaching, also sees the present composition of her classes as a change for the worse: "Well, when I first came . . . I got quality students mixed in with the average student, so I could take and team the kids up in cooperative learning, with the strong to help the weak. And now I would say last year and this year, I have seen it become a dumping ground."

As teachers see it, the dilemmas of dumping ground placements are exacerbated when they dominate a teaching schedule (e.g., three periods out of five), and when they continue throughout a school year. As we were observing one of Mr. Sanford's classes, on an afternoon in mid-spring, a new student joined the class. The student had been assigned to this sixth period class after having been ejected from baseball practice as a result of discipline problems. Such circumstances make it difficult for teachers to rely on a reservoir of expertise and enthusiasm to compensate for school placement practices that leave them with tough classes.

Despite the frequency with which we heard reference to the dumping ground syndrome, it is not a problem to all vocational teachers. It is not entirely clear how to see a pattern in the exceptions, but there are certain possibilities. Some teachers more than others have constructed defenses against the dumping ground problem. In effect, those teachers who have invested the most personal resources in building a program that earns favorable word of mouth among students are least vulnerable to the dumping ground problem. At Oak Valley, the director of the school's early childhood education program recalls that when she began the program in 1974, "I got the dregs, those who couldn't handle anything else." She "didn't complain about the students at first" because "I knew it would build. . . . [Now] we get students at all levels." Her recruitment efforts are aided by the present topical value of child care: "Child care is an important topic now, even though the pay is still low."

The closer a course comes to being defined as a general purpose elective (i.e., not "vocational" in orientation), the more likely it is to attract some number of more academically successful students; graphic arts at Onyx Ridge and child development at Oak Valley are examples. Karen Eaton, who teaches both regular and ROP classes in computer applications, comments, "I get just about pretty well everyone because they'll take a computer course even though they're an AP student." Such proactive strategies are only rarely collective and departmental; rather, the interpretation and management of dumping ground placements is primarily an individual matter. Thus at Onyx Ridge, one of the two industrial arts teachers feels virtually untouched by the dumping ground problem, while his colleague feels plagued by it. In the same school, one of the two teachers of consumer/ family studies (home economics) complains that her classes have become a dumping ground, while her colleague in the next room reports that she is pleased with the students she is able to attract.

In a quite different vein, some teachers more than others embrace the task of teaching low-achieving students and derive considerable pride from any achievements they see; what some interpret as a dumping ground, others treat as fertile territory. Teachers' own backgrounds may account, at least in part, for the differences. In this regard, we might contrast Josephine Raney, who "subbed in everything" before coming to teach in a Regional Occupation Program devoted to special education students, with Roger Townsend, whose path has taken him from a drafting specialty in an area vocational center to a class populated by students he sees as the non-English speaking and the non-academic. Raney does not affiliate herself closely with a particular subject specialty, and speaks as if she has won a prize in her full-time assignment to special education students; Townsend speaks with a sense of regret that centers on a loss of a subject specialty.

Teachers who complain of dumping ground placements tend to blame counselors and administrators for making decisions that treat both students and teachers inappropriately, with deleterious consequences for both. Certainly the placement decisions of school counselors have not gone without criticism in the past, particularly in research oriented toward school tracking practices. Nearly thirty years ago, Cicourel and Kitsuse (1963) focused on the nature and consequences of student placement decisions made by high school counselors, finding them linked more closely to student family background than to measures of academic attainment. In the decade just past, Oakes (1983) finds little

changed in her investigation of school tracking.[16] In this instance, we have no systematic evidence on counselors' placement criteria and methods, nor on the records and dispositions of students assigned to these vocational classes. Thus, we have no independent and objective basis on which to judge teachers' complaints regarding dumping ground placements.

What explanations might be constructed to account for the placement patterns that teachers characterize as a dumping ground? One such rationale is that vocational courses are intellectually less demanding ("easier") than academic classes and are seen by counselors as appropriate placements for students who have failed at academic coursework. Frank Leonard, a college math major who now teaches three periods of geometry and two periods of drafting, records his own experience in terms consistent with this explanation. Students in Leonard's drafting classes typically display two kinds of problems with course content—achieving the necessary precision and visualizing in three dimensions—but the content of drafting, he says, is "not that complex." Math is a problem because "it builds so much," requiring cumulative knowledge of concepts. In math, Leonard reports having to eliminate certain proofs and otherwise "lower standards" to accommodate lower-achieving students.

But the assumption of differential content demands, even if defensible in some instances (and we are not prepared to enter that debate here), seems unlikely to be warranted across all vocational topics. At the very least, it seems an oversimplification to assume that the cognitive demands of woodworking are substantially less than the cognitive demands of English composition or quadratic equations—even if the curriculum-in-use is constructed to make them appear so. A business teacher who teaches computer programming speculates that the student failing in math is unlikely to succeed any more readily in her class, which requires some of the same concepts and skills: "A slow kid is just as slow on a computer as he is in Algebra."

Embedded in arguments about equivalent or differential *course* demands, however, one tends to find certain assumptions about the nature of *individual intelligence*. For the business computer teacher who claims that "slow is slow," and for the many who echo her

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[16] This argument is not intended to imply malicious intent on the part of administrators and counselors. We assume that counselors are not bent on punishing teachers or diminishing the life chances of students, but may nonetheless engage in practices that have those effects.

words, intelligence appears to be unidimensional and fixed. Indeed, the general tenor of conversations about dumping grounds appears to rest precisely on such assumptions. Those who resist such interpretations theorize about multiple dimensions of intelligence and multiple modes of learning, pointing out that some students who struggle with conventional paper-and-pencil tasks prove adept at tasks requiring non-linear or spatial reasoning. We encountered more of the former perspective than the latter, which may in fact be an artifact of student placement practices that leave teachers unable to locate students' special talents, or disinclined to search for them.

Whatever the administrative rationales underlying student placement practices, and whatever the empirical or theoretical grounds on which one might argue for or against the counselors' decisions, the fact remains that large numbers of teachers employ the phrase "dumping ground" to describe those practices. Certain points seem relevant. First, the very phrase "dumping ground" conveys teachers' attributions of responsibility for the probable success of a class; in effect, these discussions signal certain adversarial relations between some teachers and counselors, and subsequently between those teachers and students. Second, the phrase can be heard as a statement about the psychic rewards of teaching—those rewards that presumably derive from the relations one forms and the achievements one finds with students. When Ed Gordon inventoried the subtle and not-so-subtle assaults on the dignity of vocational education, he listed "the priority of scheduling, the type of students I have to deal with . . . I mean, I do like to have a little sprinkling of some normal kids once in a while." A wood shop teacher maintains, "When capable students had a chance for electives, my goals were met better." An experienced auto shop teacher says, "I have a few of the top students occasionally, which helps me keep my perspective." That is, "dumping ground" sums up the difficulties and frustrations a teacher is encountering in daily work. It is a statement not only about the placement practices that bring students to their door, but also a statement about the relation that teachers and students form in the classroom.

Teachers interpret the dumping ground problem as one of student "motivation" or "direction" or "interest." A business teacher at Valley says, "They're not mean kids; they're not bad. They just won't let you get on with the business of education. And that's so frustrating to me." Roger Townsend came to Esperanza from the Area Vocational Center, which he names "my most enjoyable teaching assignment." At the Center, "The students had a direction. I didn't have any discipline problems. It's so easy to teach

anybody that wants to learn. The hard thing is to teach people that are in a place they don't want to be." Now, he says, "Maybe fifty percent of the class will say, 'I have to be here. I need this to graduate.' So most of my time at the beginning of the year is trying to convince them that the subject matter can make a difference in their lives."

In *The Shopping Mall High School*, Powell, Farrar, and Cohen (1985) portray vocational education as one arena in which teachers' work is made satisfying—more satisfying, often, than the work of academic teachers—because students enter vocational programs with an interest in acquiring work-related skills. Many of the teachers we visited would greet such claims with stunned disbelief. Students find their way into vocational classrooms for many reasons that are only tangentially linked to an interest in preparing for work. Some of them are students who profess no enthusiasm for academic courses, and who have accumulated long records of failure in school; they are not necessarily converted to school enthusiasts when placed in less academically-centered classes.

To say that the clientele of vocational education in comprehensive high schools consists of those who are "interested in work" is to misrepresent the reality we encountered. Those labeled "non-college bound" are not necessarily those who have embraced work. And those who are placed in these classes to gain help with rudimentary language skills have not abandoned academic aspirations. Nor, if the students were genuinely interested in work, could teachers fully capitalize on that interest; most teachers do not feel that the schedule of courses they are now able to offer would live up to the demands of preparing students for a specific trade. In the eyes of these teachers, such student placement practices succeed in filling classrooms but seriously compromise the prospects for successful teaching.

Vocational Courses as Remedial Academics

Vocational courses have been modified to serve the purpose of remedial instruction in basic academic skills. By orienting a large share of course content to remedial work in English, science, or math, teachers are authorized to offer graduation credit for such courses. Six of the twenty-three sections we have labeled "vocational" in Oak Valley's business curriculum are in fact low-level math courses (Consumer Math and Business Math). These courses, despite their differing titles, are described by a business teacher as fundamentally the same: "Basically it's high school proficiency math. It's percents,

decimals." A business teacher at Esperanza creates a similar picture as she speaks of her two periods of business recordkeeping:

> My other two classes are two periods of recordkeeping, which are [for] a low-level math ability student. A number of special ed. students. . . . It's real basic. It's how to balance your checkbook, how to write checks, how to make receipts, the whole gamut of keeping records for different occupations. For bank tellers, for a cashier, how to prove cash at the end of the day in a cash register, all the way up to the end of the year where we do a payroll and we go through income taxes. But it's very basic, and we're dealing with math abilities eighth grade and below, generally.
>
> It's a business class, but they can receive math credit for graduation. Not for college entrance, it's not accepted by any university. But they can get graduation math credit. So, if they've had a problem with math, they've taken introduction to algebra and failed miserably, then they would usually choose to come to recordkeeping. It's about the lowest level math class that the school has to offer. (ES066)

In our five schools, vocational teachers and teaching in these schools have come to be defined less as a means of offering students a coherent course of study leading to work, than as a means of shoring up the margins of the academic curriculum. In almost any class, one observes some students who are fully engaged in the topics and material at hand, and who are pursuing a course that they fully intend to lead to employment. But this is not the most common picture. In all of these schools, students who enroll in vocational classes (with a couple of prominent exceptions) have tended to be students who have not succeeded in academic coursework.

Academic departments, too, must come to terms with low-achieving students and students who present special challenges. The policies within departments for assigning responsibility for those students vary widely, sometimes within the same school. In Oak Valley's English department, all teachers share responsibility for teaching lower sections on a rotating basis. The aim, according to the department chair, is to move students out of those sections and into regular classes as quickly as possible. The science department in the same school has relied on seniority to make teaching assignments, with the result that the newest teachers have traditionally been assigned the lowest achieving classes, the youngest students, or the most generic courses. The distinguishing feature in vocational education, however, is that for at least some vocational departments (especially industrial arts), the entire program has come to be oriented toward basic levels of subject mastery. And when vocational teachers assume teaching responsibilities in academic areas, they

again are asked to take the lowest achieving students and the most rudimentary elements of curriculum.

Students as Cases of Special Needs

At four of the five sites, veteran teachers have witnessed dramatic increases in the number of their students who present special needs of one sort or another. "If it wasn't for special ed. kids and ESL kids," says one industrial arts teacher, " I probably wouldn't even have the three classes I have. . . . This year I have two classes where probably a third of them are Spanish-speaking." Teachers tend to lump these two populations together, though they are arguably quite different in terms of their probable academic orientation and the demands they place on teachers' competence.

The impetus toward mainstreaming contained in P.L. 94-142 is clearly evident in these classes, even at Oak Valley. Teachers are coping, some with more confidence and optimism than others. Josephine Raney, whose background combines home economics and business, teaches a Regional Occupational Program at Valley geared to special education students. Although she had no formal background in special education, she has embraced this assignment, and this group, with enthusiasm:

> It's very exciting. . . . They need a lot of attention. You have to be a very patient person. . . . They need a lot of time. They need a lot of positive reinforcement. Sometimes they have a lot of negativism in our school with the students. . . . So you have to do a lot of praising, give them a lot of love. It's just like your own kids and you kind of have to—sometimes you come in and you have to baby the whole class during the day. So it depends, you never know what your day is going to be like because you don't know what kind of attitudes they are coming in with. (VA023)

Olivia Henry directs the children's preschool on the Oak Valley campus. She maintains her equanimity in the face of increasing special education placements—up to five or six in a class of twenty—certain that she can find a way for most students to fit in and benefit from her program:

> It works out all right because we have so many people in class. And if they're—I hate to use this word, but—I think you'll understand when I say it, but if they're "nice" it works out. If they're not, if they have kind of a bad attitude and I can't trust them with language, it doesn't work out. Now, often times special ed. will send an aide, which is just beautiful. There's one aide who knows my class really well. . . . I have a little gal in my fourth period class who can't even read because she has dyslexia with a bunch of other things going on. But yet, there's one little preschooler who,

without a mother, just clings to her. Just really loves her to death. So we really see neat things going on with her and this little preschooler that doesn't have a mother. And we've already concluded a long time ago that she'll probably never be a preschool teacher, but maybe she could be an outdoor aide, supervising the children. (OV067)

Those vocational specialists whose identity and pride are most closely linked to a craft specialty are most disconcerted by the shift in student population. No longer are they able to teach a curriculum they have spent years honing. Irv Jackson, a vocational agriculture teacher, airs the frustration we have also heard from others. Unlike Josephine Raney who did a great deal of substitute teaching before taking over her present program, Mr. Jackson's driving interest is agricultural education:

> I must have fifteen special ed. students. And I find out that a special ed. teacher's not supposed to have more than twelve. And I'm not even a special ed. teacher. So what do they expect?
>
> They have people come into the class that can't speak English, students that can't read or write. They have students in here that are below 2.00 grade point average and I'm supposed to deal with that. And I'm not trained to do that. So I'm frustrated because I can't move along in my curriculum fast enough to cover my standards.
>
> And the good students in here—I have good students. You can see some of our accomplishments. I feel sorry for them. They're bored. "We heard this yesterday, Mr Jackson." Right, if I don't repeat it, I'm going to lose ten to fifteen people. (ES009)

The increase in limited- and non-English speaking students is a consequence of the rapidly shifting demographics in California schools; the population increases are outstripping districts' capacities to supply specialized programs and specially trained teachers. At Esperanza and Rancho, vocational teachers describe student placement patterns that make vocational teachers disproportionately responsible for absorbing the increase. (We do not have data on the distribution of limited- and non-English speaking students among academic and non-academic classes.)

Some teachers seem quite sanguine about the increase in limited-English speaking students. Ed Gordon, an industrial arts teacher, is replenishing his high-school Spanish through contact with his students, and finds most of the recent immigrants eager learners. Others are concerned or frustrated; Roger Townsend's scenario (Figure 3) illustrates some of the sources of their frustration: student placement practices that seem to settle for

"holding" students rather than teaching them, and teacher assignments made without regard to relevant teacher background. Teachers find it disconcerting to be faced with students whose needs they do not understand and whose very presence may create new challenges ranging from classroom safety to effective instructional methods. Here, a teacher argues that placing limited- and non-English speaking students in business or other vocational classes does both them and the teachers a disservice:

> It has been the blind leading the blind. Taking a business teacher and putting them into two periods of ESL two days before school starts when they've never taught ESL before in their lives. . . . They were notified like two or three days before school started. . . . That does not bring up the kids' language acquisition if you have people who don't know what they're doing; you don't have text books; you're xeroxing things day-by-day. (ES024)

The concerns teachers express regarding the safety of limited-English speaking students in shop or laboratory settings parallel those we heard in the case of special education students. Industrial arts teachers worry about the safety of special education students, and note that the aides who accompany the students often know little or nothing about the equipment themselves. Here, a home economics teacher details the problems she encounters with large numbers of Spanish-speaking students:

> I was very shocked when I had so many non-English speaking students. . . I'm not bellyaching, but I do see it as a real hazard. . . . The other day we were cooking with butter and one kitchen [group] didn't understand that they were to put it in the microwave and they put this glass dish on the range. And because I was pretty alert, I saw that they had it there and went over and removed it before it became a fire. (ES045)

Teachers are thereby presented with challenges to their pedagogical expertise. Many of the students who now populate their classrooms, according to teachers, are in some way or other difficult to teach. But their identity as vocational teachers is challenged in yet another way. A consequence of the push to academics, the corresponding reduction in non-academic electives, and the shift in student demographics is that vocational teachers do not have students who are recognizably dedicated to their areas of subject expertise.

Figure 3

A "Special Needs" Scenario

"They're trying to mainstream these kids that don't speak English. Not caring one bit whether they cut off their fingers in metal shop. Not caring whether they learn anything in the class, as long as they've got the numbers.

I'm talking about a person who came in to me last year and said, 'You're low on numbers, can you take some ESL kids in here?'

And I said, 'This is drafting. What do you want me to teach them? Are you going to give me an aide?'

'We don't have an aide.'

'What should I do?'

'Well, can you hold them just for a while?'

And so I held them for nine weeks and I taught them—I had math packets that I wrote up. Nobody helped me with it, but I got math packets together and I said, 'Ok, here's some math.'

I would like to teach them drafting, but they don't understand. So I don't get an aide to help teach them drafting and I was just in a holding pattern.

And then she comes in and says, 'Can you take two more?' Now that's not caring about what you're doing with kids.

The Missing Vocational Students

In some very real sense, these are teachers without students. That is, there are few or no students who are clearly dedicated to a vocational course of study. Xenia Young recalls her first days as a business teacher:

> When I started, you had someone who said "I want to be a secretary or I want to be a bank teller." And they took accounting and office machines and typing and shorthand and regular business curriculum. We don't do that any more. (ES024)

When he taught at the Area Vocational Center, Roger Townsend had drafting students who were with him for several hours a day, several years in succession. He, like his colleagues in the academic departments, traces the satisfactions of teaching to a combination of "teaching a subject" and "getting to know kids":

> I was teaching kids to become drafters and designers and engineers. And as they came over to me they knew what they wanted to do in most cases. As they were there three hours every single day, I got to know them probably better than their parents. . . . Those are the kinds of rewards. I had a student that came back last year and showed me a design that he did for a digital tire gauge and he gave me one as a present. He's at the state university now and finishing up his senior year in engineering. Those are the success stories that are neat, but those were the times when we taught subject matter. (ES043)

Townsend's classes at Esperanza are now likely to be filled with students who "don't want to be there"—those he professes are hardest to teach. Vocational teachers no longer expect to cultivate a cadre of students who pursue a coherent program of study over a period of years. Teachers attribute much of their difficulty to restrictions on student choice at the high school level:

> They [should be able to] make their decision when they're in high school that "I don't want to take Algebra 5/6, I want to take Typing II." Or, "I want to take an office job that will prepare me better than German 5/6." So they could stay in the business department and prepare themselves for jobs.
>
> I ran into a student of mine that worked at the Party Shop and she said that when she grows up she wants to have her own party shop. I said, "That's great! You know that now. Have you taken Accounting?" "Well, no." "Well, then how are you going to know about your profits and loss? Have you taken General Business?" "No." "Have you taken Marketing? How are you going to market this?" "Well, I don't know." And I said, "Have you talked to your counselor about this?" And she said, "Well, yeah, but she said that in order to graduate I needed my higher levels of math." So here's a kid, prime example, that knows what she wants to do, but was prevented from [taking] the business courses by her counselor. So that's

> frustrating. That, I think, inhibits a little excitement, when you know you want to create a course and your enrollment's not going to be there. (OV129)

Almost certainly there are other explanations for the "missing vocational student," some of which lie outside the control of vocational teachers. In some instances, these programs may be suffering the effects of inflated credential demands; jobs that previously required only a high school diploma now are filled by candidates boasting at least two years of college work and a specialist (AA) degree. Concentrated programs of vocational preparation are thereby shifted upward in the system. In other instances, the nature of locally available work no longer represents a close fit with what vocational teachers are prepared to offer in the high schools. A metal shop teacher reports:

> I've had a real close tie with AdvanceCo. . . . They had a big machine shop and fabrication plant over here. That relationship's been real good, but I haven't done anything this year because they're closing down their machine shop. . . . They'll be just doing plastic injection molding mostly. . . . I probably had twenty of my past students that work over there now. But that program has since been eliminated because of the close-down on the manufacturing end of it in the machine tool area. (OV131)

Whatever the contributing factors, the result seems clear enough to teachers: Their students are only rarely vocational students in any traditional sense.

Teaching the Compressed Curriculum

These are teachers not only without students, but also without curriculum. In all the schools, vocational course offerings have a decidedly fragmented look, with remnants of coherent and sequenced programs interspersed with general purpose electives. The college bound orientation on the one hand, and the press to develop remedial programs in the core academic subjects on the other, have diminished the time available for a meaningful sequence of courses in the vocational areas. The result is a curriculum that is compressed in several respects.

Tenuous Connections to Work

The first aspect of this fragmentation is a diminished sense of place and a displaced sense of purpose. A teacher who sponsors the Future Business Leaders of America recalls how, in a previous time and place, she was able to oversee a program in which students participated both in classes and in the club, for different but related ends: "We used to learn

the theory in class and then come to the club to learn the leadership skills and learn how to be involved in the community." But these dual purposes are obscured when students who join the club are no longer the same students who populate the classes. They "come [to the club] . . . thinking they're going to learn some business theory, and that's not the purpose of the club." Further, she has trouble locating her club members during the school day because "they are not business students":

> With my club, FBLA, the kids are supposed to be business kids. Well, they don't have time in their schedules to take business classes. So the kids who join the club basically are there to join a club. They want something on their transcript, and then once they get in the club and see some of the things we do, then they get kind of enthused. But they still are not business students. . . . I have a real hard time finding the kids because they're not in our classes. If I want a message, I have to run and go find a kid. (OV129)

And the Future Business Leaders of America, meanwhile, for those students who see the world of business largely through its lens, is thus curiously devoid of substantive content about business, except insofar as being in business entails involvement in a community. The sponsor has "shown videos on 'How to Handle a Job Interview,'" but the main activities are taken up with community service:

> We worked with the community on one of our "Oak Valley Days," . . . we helped out the community with booths. . . . We helped at Open House as ushers. We were the ones that sold at the football games, so we helped the school provide ticket sellers, but then they donated money back to us as a school service project. So we did that. We helped March of Dimes. (OV129)

Few vocational teachers in these comprehensive schools foresee a stream of students flowing directly from their high school programs into the associated occupations or community college programs; estimates ranged from two to ten percent, although all teachers could cite individual success stories. Oak Valley's wood shop teacher says, "I would like to think that any kid who left our program, that I could get him a job at woodworking, but that's not true, that's not true. As far as employment is concerned, maybe each year I may have under five percent that would be going into a construction trade. That's not very many." In the industrial trades, the problem is exacerbated when the

burden of finding job placements falls on individual teachers, who establish relationships one employer at a time.[17]

In the search for adequate enrollment, therefore, teachers modify course content and objectives to achieve a broader set of aims and develop separate courses that might be termed "personal interest electives." Thus, for example, Greta Royce at Onyx Ridge explains,

> We go like this in Home Ec. We have our, you know like regular classes like the Independent Living Class, and then we have a class like mine [Child Development]. Its goal is to train for a job. (OR027)

The competition for student enrollment also places vocational teachers in conflict with the coordinators of work experience programs. Time that students spend in out-of-school job placements is credit-bearing time not spent in one or more of the regular course offerings in a vocational specialty. In one school, vocational teachers sought strict limitations on the amount of work experience time that any student could accrue.

With the fragmentation of program, it becomes less tenable for teachers to claim that they are preparing students for work. In this regard, vocational teachers in comprehensive high schools distinguish their own circumstances from those enjoyed by teachers in schools, centers, or programs dedicated to vocational purposes. Edna Vickery distinguishes what she attempts in her home economics classes from what the area vocational center is organized to do. The area center, she claims, prepares students who "can usually step into a job in that area." Her own aims are explicitly not vocational, but are "geared to the homemaker role. You're going to get these skills and work in life. But you're not going to take necessarily these skills and go to a job" (ES045). Conceptions of what it means to prepare "job-ready" students are narrowed:

> Those students who take one year of accounting, we would consider to have entry-level skills for bookkeeping and be job-ready. Typing I, Typing II, we would still encourage those students to go on to a word processing class. . . . So that those students, then, who go on to the word processing classes, we would consider to be job-ready. (OV087)

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[17] This pattern of individual pursuits contrasts with some of the evolving "Academy" models constructed around institutional agreements between a school and a group of potential employers, or among the school, trade unions, and employers (Grubb, Davis, Lum, Plihal, & Morgaine, 1991; Stern & Dayton, 1990).

In sum, vocational education in comprehensive high schools is rendered less and less vocational by the splintering of vocational emphases in the curriculum. Meaningful connections between school-based preparation and the world of work are difficult to discover. The demarcation between school knowledge and everyday working knowledge is intensified. This problem is arguably one that extends to the academic curriculum as well.

Short Time and Shallow Subjects

Curricular depth and coherence is judged both by the emphases of individual courses and the relations between courses. Teachers consider curriculum depth and coherence to be jeopardized in two ways: first, by reducing the range of total offerings and concentrating on introductory courses; and second, by combining topics and levels within single course offerings. Sequenced elements of a program (e.g., Auto I, II, III, and IV) may be offered simultaneously as a way of maintaining adequate enrollment in individual class periods. To some extent, Valley remains an exception, aided in part by the two hour block schedule and more by a student population that has formed a traditional clientele for vocational programs. The auto shop instructor can describe a population of advanced students who have been with him two, three, or four years. He can describe a structured curriculum that he distinguishes from "the hobby shop idea," and a class schedule that includes one class reserved for advanced students. And as a criterion of his own success, he counts the number of students who go on to programs in the community colleges or to one of the auto industry's own specialist programs (last year the number was four). Even so, the business teacher at the same school lists a mix of topics and levels in two of her five class periods:

> Let's see, first period I have Computer Applications and Automated Business Procedures. Second period I have Word Processing, Keyboarding I, Keyboarding II, and Keyboarding III. (VA092)

Teachers would prefer to organize the curriculum and group the students in ways that permit them to concentrate on instruction. Roger Townsend estimates that in his single drafting class "I probably have eight classes at the same time!" In contrast, he says,

> I used to have the privilege of having an advanced class and I would take them individually. I would have a beginning class that would have all beginning people. Well, we don't have that luxury any more because of the requirements to graduate from high school. . . . It's hard to get good at the subject with only one year of it. (ES043)

> A second form of the "compressed curriculum" consists of a narrowing of topics: fewer and shorter; not two or four semesters of study, but one. Karen Eaton speaks of the compromises she makes in accommodating multiple instructional and curricular aims within one semester of her computer applications course: Lotus, D-Base. At the same time I'm trying to teach them grammar, you know, proper letter layout and the things that accompany that. You can't do that in one semester. The students mainly come in for one semester. They're supposed to have a pre-requisite of typing, but a lot of them do not. . . . So, I have sort of a condensed version that goes for one semester in which we cover reports, business letters, and Word Perfect. We don't get any speed. I can't do it and teach Word Perfect. So I just dropped the keyboarding and I give them a few timed writings and I say "Ok, look you need to take keyboarding, you need to take keyboarding, otherwise you won't get a job in this field." And it's as simple as that. (OV088)

The "compressed curriculum" theme is echoed by others in the department:

> I feel constrained in what I can do. At my previous school typing was a full year, so I felt like I was really reaching those kids. Here it's only one semester. Plus, in computers we have a prerequisite that they know typing, but it is not enforced. So we get kids in there who don't know how to type. (OV129)

Finally, the time structure of the instructional day in three of the five schools makes it difficult for teachers to schedule the kinds of activities that place classroom learning in the broader context of work. At their best, vocational courses offer authentic practical contexts for learning of a sort rarely available in the secondary school curriculum. In three of the schools, vocational programs, like academic classes, are scheduled in fifty-minute periods. Valley employs a two-period block schedule for four days of the week, and Oak Valley for two; even so, the schedule at Valley still leaves the students in field-based ROP courses gasping and the teachers worrying that their short daily stint on a work site is more of a burden to employers than a benefit. It hardly adds up to what learning theorists have recently termed "legitimate peripheral participation" as a means of successfully entering "communities of practice" (Lave & Wenger, 1991).

These three forms of curriculum compression result in a steady press to redefine the "vocational" nature of vocational classes. Vic Cameron, teaching graphics at Valley High School, labels his program of study "basic," an "exposure class." "It's not vocational," he says. Teachers say they have cultivated a "realistic" sense of what can be accomplished with the limited course offerings. They concentrate on basics. One wood shop teacher explains, "We're exploratory with a little of the vocational career mixed in." Wood shop is

an "avocational set-up": "A kid could come in and . . . make a couple of projects and take them home." Another agrees:

> I look at what I teach as a stepping stone. I don't see it as an end in itself. Not every kid I have in my class is going to be a cabinet maker, but it's skill that they can sure take with them and build on something else. I give them basic knowledge of tools and you need that area in every single trade. (ES030)

The tensions between curriculum coherence and curriculum compromise are ironically intensified in ROP classes. In one sense, the presence of ROP programs signals an occupational orientation in the departments that offer them. In most cases, they would appear to represent one part of a larger sequence of courses in a specific occupational area (especially where they are linked to state-supported agreements with local community colleges). At Oak Valley, for example, the teacher who directs the ROP in fashion merchandising also teaches two periods of clothing and one period of interior design. For most students who enroll in these classes, however, the coherence is largely on paper. Students who enroll in the general courses do not necessarily enroll in the ROP, nor have students in ROP necessarily come from prior coursework in related subjects. ROP programs themselves have no prerequisites, and thus are populated by students with a wide range of skills and background. As one teacher characterized the criteria for enrolling in his program: "They have to be sixteen and wear shoes." Student placement practices and criteria thus appear to result in very few instances in which a student can or does take a coherent sequence of courses, or engage in work experience linked to coursework, in ways that might persuasively lead to work.

Segmented courses, even if sequenced, serve to fragment and decontextualize essential working knowledge. This is not an area we set out to study, and we attempt no more here than sharing some of our own puzzlement. It is a puzzle centered on questions of what, in fact, is basic in the school curriculum. Lave and Wenger (1991) employ the construct of "legitimate peripheral participation" to describe the way in which learners—whether young people or adult newcomers—move gradually toward full participation in "communities-of-practice." They rely in part on four investigations of apprenticeship learning to develop and exemplify their central concept of legitimate peripheral participation. Despite differences in the contexts, content, form, and effectiveness of apprenticeship embodied by the four cases, each pursues learning in the context of real-world, socially situated practice. "Learning," or moving both cognitively and socially

toward full participation, takes place in parts and stages, but always in the presence of the full configuration of practice. Learning does not consist only in mastering a sequenced set of technical skills but also in mastering the entire pattern of social practice and social relationship in which those skills assume meaning. Nor is the productive sequence of learning tasks—what is basic and what is more complex—evident out of context. One example may help clarify this last point. In each of the industrial trades programs we visited, students were expected to begin by demonstrating their mastery of simple tools and the operations performed with those tools; they then began to complete simple projects. In the craft apprenticeship described by Lave, however, novice tailors began by doing the relatively simple finishing details work on completed garments. Lave describes the organization of learning opportunities this way:

> *Learning* processes do not merely reproduce the sequence of *production* processes. In fact, production steps are reversed, as apprentices begin by learning the finishing stages of producing a garment, go on to learn to sew it, and only later learn to cut it out. . . . Reversing production steps has the effect of focusing apprentices' attention first on the broad outlines of garment construction as they handle garments while attaching buttons and hemming cuffs. Next, sewing turns their attention to the logic (order, orientation) by which different pieces are sewn together, which in turn explains why they are cut out as they are. Each step offers the unstated opportunity to consider how the previous step contributes to the present one. In addition, this ordering minimizes experiences of failure and especially of serious failure. (Lave & Wenger, 1991, p. 72, emphasis added; see also Lave, 1986)

Such descriptions of situated learning would strike a familiar chord among many of the vocational educators with whom we spoke in the five schools. Their discussions of preferred pedagogy coincide very closely with the discussions of optimal apprenticeship learning developed here. But almost none of these teachers would argue that vocational education in their schools is now organized in this manner. Most often, small-scale hands-on projects substitute for a more robust array of learning problems and opportunities. At best, short-term intern placements with local employers, provided through Regional Occupation Program classes or work experience arrangements, provide students a small glimpse of actual work environments. For all of the reasons enumerated here—conceptions of the purposes of schooling, practices of student placement, the organization of school time and sp. and others—vocational educators find themselves propelled toward a compromise with pedagogical principle.

Where learning occurs in the context of real-world work, of course, errors made by novices may prove costly in real-world economic terms. One might argue that the sequence of learning among the tailors, whatever its cognitive advantages, serves the more immediate function of limiting costly errors (i.e., a clumsily sewn button is more readily retrievable than badly cut trouser legs). But the argument for cognitive and social learning is also persuasive in this and similarly constructed conditions of apprenticeship. And it is precisely the problem of well-organized apprenticeship that proves most troublesome here. A case of apprenticeship in the meat-cutting trades, also summarized by Lave and Wenger (1991) based on work conducted by Marshall (1972) , demonstrates that apprenticeship conditions are not necessarily constructed in ways that promote learning. The case of the butchers' apprenticeship may more closely approximate conditions of American workplace learning. In Marshall's case of a union-sponsored program culminating in a certificate, apprentices encountered consistent disparities between the content of the traditional trade school curriculum and the learning demands of the supermarket workplace. And in the workplace, cost-efficiency considerations prevailed over training considerations. Although apprentices understood, in a broad sense, that they had little command of the knowledge and skill displayed by experienced meat-cutters, their opportunities to observe or participate in a range of meat-cutting practices were few. Marshall reports, "When he arrives at a store, an apprentice is trained to perform a task, usually working the automatic wrapping machine. If he handles this competently, he is kept there until another apprentice comes" (p. 42).

Opportunities to learn, in this instance, are limited by the social and technical organization of the work and by a physical organization of work space and equipment that makes observation of others' work difficult. Ironically, the opportunities to learn or opportunities to derive satisfaction from genuine accomplishments are limited not only for the newcomers, but also for the experienced workers. Marshall (1972) adds, "In this situation, not only apprentices but journeymen, too, seldom learn the full range of tasks once proper to their trade" (p. 46).

Indeed, some school-based vocational programs may offer far more opportunity to learn, and far more aesthetic and intellectual rewards, than the work environments in which the vocation is to be practiced. One recent treatise on work education offers the example of a student whose desire to be an upholsterer was fueled by the "sense of craft and quality" that developed around project-based work in school; the student was in turn dismayed by

his first encounter with a disgruntled coworker in an upholstery shop (Simon, Dippo, & Schenke, 1991). In any event, it seems clear that program declines in vocational education might serve productively to reconceive the relation between formal schooling and work, and to reconsider the nature of "opportunity to learn" in the secondary school.

Teaching Assignments: The Good and Poor Fit

The public's stake in a well-prepared teacher workforce is expressed through state policies governing teacher certification and through local policies regarding teacher hiring, placement, and evaluation. Over the past ten years, states have tightened controls over teacher assignment at the secondary level to reduce the incidence of misassignment. Assignment practices in the five schools we visited were consistent with present state law, though not always consistent with the state's intent to ensure thorough subject matter preparation. That is, many vocational teachers are old enough to have obtained their credentials in the days when the state issued "general secondary" credentials, an option that no longer exists but that continues to affect teaching assignments. Assignments were also constrained by locally bargained contracts; local contracts typically added the element of teacher consent in cases of out-of-subject assignments, though one might imagine consent being readily granted in times of teacher layoffs. The number of genuine crossover assignments in which teachers are asked to take on new subject matter is quite small.

Inside the local school and in the fabric of teachers' daily work, the fit between teaching assignments and teachers' own preparation and preference proves a more complex matter than credentialing regulations or other placement policies can anticipate or accommodate. One's self-image as a teacher is bolstered or eroded by the daily ebb and flow of the classroom. A teacher's competence and confidence are tested in the moment-by-moment exchanges among individuals and in the dynamics of specific classes. In a five-period teaching day, teachers readily distinguish between the "good" classes and the "tough" ones; it is not uncommon for teachers to experience widely fluctuating levels of success and satisfaction from one class to another. Indeed, the variance in performance efficacy is nearly as great within a teacher across classes as between teachers.[18]

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18 Raudenbush, Rowan, and Cheong (1990) report that variation among teacher ratings of perceived success by class vary nearly as much across the five classes taught by a teacher as across teachers (43% of class-level variance is intra-teacher variation, and 57% is inter-teacher variation).

Workload

Fragmentation in program manifests itself in the teaching schedule of individual teachers. Encompassed in the conception of "load" are the pragmatics of teacher assignment: the number of preps, the type of out-of-class preparation in the form of lesson planning or the organization of materials, and grading or other evaluation of student work. Fragmented teaching schedules exacerbate workload stresses in two ways. First, they magnify the burdens on planning and preparation. These districts all include in their collective bargaining agreements the number of acceptable "preps" for secondary teachers. The reality can be quite different from the contract specifications. A business teacher tells us, for example, "Our vice principal in charge of curriculum doesn't believe a sheltered class is a different prep than a regular class." Here is her daily schedule:

> Most of us start second period, first being a before-school period.
> Second period I have recordkeeping which is sheltered
> [non-English speaking] and is all Hispanics.
> Third period I have accounting 1-2 and accounting 3-4.
> Fourth period I have what we call Math A,
> which is the class that is taking the place of
> introduction to algebra.
> Fifth is my prep,
> sixth is contact, and
> seventh is Math A again.
> Eighth period I have spirit,
> and that runs until Mondays 3:00,
> Tuesdays 4:00, Wednesdays 5:00
> and Thursdays and Fridays until the game's over. (ES056)

But there is also workload in the sense of the interactional demands felt in classroom encounters with more than one hundred students each day. Teachers assess their teaching schedule in part by the emotional tenor of their relations with students, the ease with which a satisfying relationship is formed or a sense of teaching well is achieved. Workload is expressed in terms of how tough it is to teach any particular class, or a specific combination of classes. Split assignments make it harder for a teacher to have a sense of being part of something coherent and meaningful, with students or with fellow teachers. Teachers believe that their genuine interests in their subject matter and their commitments to students are thwarted by assignment practices that make poor use of their experience and expertise.

Fit with Teachers' Preparation and Preference

Quite apart from matters of appropriate credentialing, teachers may acquire assignments that are only tangentially related to what they consider to be the strong suits of their own professional background and a good fit with their personal preferences. Questions of appropriate fit center around both *subject matter preparation (and affinities)* and around teachers' *comfort and compatibility with the students* they encounter on a daily basis:

> While some individual background factors seem to make a difference, an important source of variation in teachers' sense of efficacy is their *class assignments*. . . . [S]urvey data on teachers' ratings of the extent of success they feel *with particular classes* suggests that high school teachers' sense of efficacy can and does fluctuate over classes in the course of a day according to the students' achievement level and engagement and the teachers' sense of preparation to teach the class. (McLaughlin, Talbert, & Phelan, 1990, pp. 10-11, emphasis in original)

Among the vocational teachers we met, we did find instances of a truly congenial fit. Of the teachers interviewed for this study, about one-fifth express nearly total enthusiasm for the courses and students they now teach. Olivia Henry, for example, chronicles the evolution of the program in early childhood education that now gives her satisfaction. Mr. Fuhrmann is equally pleased with his graphic arts program, and Greta Royce with her child development program. Tom Lawrence worries about the changes affecting his department, but continues to offer a full complement of auto shop classes. The two teachers at Valley High School specializing in ROP classes for special education students seem more than content with the niche they have found.

The situational nature of fit is captured in the responses of two vocational teachers assigned to teach courses in lower level math. Sam Lennard teaches business law, business math, and typing. He takes pleasure in his Business Law class, which draws "a full cross-section" of students, but claims he would "quit tomorrow" if he were assigned a full schedule of Business Math. (Even coaching, which drew Sam into teaching in the first place and which he loves, would not be enough to hold him in teaching if he taught only math.) Part of the difficulty is Sam's own lack of interest in math as a subject; and part is what he considers to be an unrewarding experience of teaching "the people the math department just rejected":

> Business Math is combat duty! These are the people the math department just rejected and every day I walk in there, it's go-to-war! I mean, if I give

> them homework, they're not going to do it, so we have to use all of our time in class on task. And it's a comedy! I do soft-shoe, I do a little song and dance, I do anything to get them to study math! Anything I can think of! And I tell you, it takes a coach to teach business math!

Sam Lennard is not unaware of the effect that teachers' own lack of subject matter interest and confidence has on students: "One-hundred-fifty students a year could be turned off to math. That ought to be addressed."

Emily Hunter, whose academic background includes a major in business education and a minor in English, presents a contrast case. She now teaches two periods of "Math A," a course for students who have been designated as unprepared for algebra, but who have not been consigned to the even lower-level courses such as Beth Elgar's Recordkeeping class or Sam Lennard's Business Math). The fact that she is content with her assignment may have partly to do with her status as a participant in a special project, and the support she receives from one of the math department's best teachers:

> [Math A] is a new program for the state of California that uses no textbooks and we are learning as we go through workshops what to do. We are being given the materials. Our district went out and bought all the manipulatives that are needed for the class and so it's all done with manipulatives. I have thirty-five scientific calculators and tons of things to do things with so we're just kind of plodding along because we're just learning how to do this. (ES056)

In assessing subject matter fit, teachers speak of three related but distinct aspects of subject matter preparation. The first is formal preparation and an adequate command of subject matter knowledge; does the teacher know the subject well enough to teach it? This is the dimension that Olivia Henry stresses when she compares her own background in early childhood education with those who have "never taught preschool." Depth of subject matter knowledge is what Roger Townsend invokes when he says,

> I started here and I had three drafting classes, which is my strong suit—teaching drafting. Drafting is what I do! Is what I've done! And I can make it an interesting class because I also did it for a living for a while. (OV043)

Subject matter fit may be compromised when staff reductions generate bumping of less senior teachers by their longer-tenured colleagues. Emily Hunter's "very favorite thing" is to teach accounting. But "our department is declining and if somebody is going to have to be bumped out, it was just as easily going to be me." To avoid being bumped,

Emily drew upon her recently accumulated hours in math to claim qualifications in lower level math courses:

> I started taking math classes because my daughter was not doing well in math. So I started taking math classes and math has always been a class that just terrifies me. I have never felt secure in it. And so I took Algebra 1/2 and I got an A. Took Algebra 3/4 and I got an A. I took Geometry, I got a B in that. I got a C in trigonometry and I figured if I'm going to go any further I have got to go back and regroup and . . . feel more comfortable again. . . . I can probably teach Algebra 1/2, but no higher. I wouldn't even really ask to teach 1/2. I'm happy where I am. And I come to these kids with a different perspective on math because math has been a hard subject for me. (ES056)

Emily Hunter appears relatively sanguine about her capacity to teach mathematics to children who have failed in math before—perhaps because of the assistance she receives as a participant in a specially funded program. Most critics of crossover assignments would not share her sense of comfort. Toch (1991), among others, charges that seniority provisions, together with weakly constructed teacher assignment and certification policies and practices, are combining to place unprepared or underprepared teachers in academic classrooms. Further, such teachers are most likely to be found in the lowest-ranking courses with the lowest achieving students—those who, by many accounts, deserve the best of teaching and the firmest command of subject matter knowledge.

The second aspect of fit is teachers' sheer liking for the subject(s) they teach. Townsend's enthusiasm for drafting permeates his talk, while Sam Lennard's dislike of math is equally evident. It is true that subject competence and subject preference are in some way intertwined, but they do not entirely coincide. A teacher assigned to the social studies department may trudge through an economics course, staying close to the textbook, yet come alive in a world history class the next period. Similarly, a teacher with a college major in industrial arts education will have taken coursework in several of the industrial trades, but is likely to feel genuine affinity for only one or two.

Finally, preparation for specific assignments requires that teachers' affinity for the subject must extend to an enthusiasm for teaching the subject to a particular population of students, and, over time, must yield a sense that one's efforts to teach the subject are repaid. Roger Townsend enumerates frustrations that begin with being denied the satisfactions of one's subject expertise, and extend to the irritations that come with students' and administrators' disregard for one's work:

> Ed Gordon (ES030) likes making furniture. I like drawing. I like making things, working with my hands. We like doing it, but we're not getting satisfaction. I get a lot of satisfaction out of the kids when they do it. But I don't get satisfaction out of the kids when they don't want to do it. . . . I hate people that don't respect the equipment that we have and don't respect the opportunities that we have. I dislike people that make decisions, when they never come in. Nobody ever comes in to see my program. (ES043)

Some classes are more satisfying than others. Edna Vickery distinguishes the close relationship that develops with her students in the American Family course from the cavalier way she feels treated by students in her foods classes:

> In Foods, it's for the day and get the hell out. Eat it and get the hell out. And clothing can be the same way. And in American Family, it's a [relationship-]building kind of thing. I mean, I don't think I could build a relationship with these kids in Foods. They just come in with a different attitude entirely. . . . The subject makes it different. (ES045)

In the face of teaching assignments that represent a poor fit and place demands on teachers' knowledge, skills, and confidence, teachers' reactions range from confidence to resignation, to frustrated resentment or helplessness. The teacher who instructs special education students in three industrial-cleaning ROPs is a case of optimism. She had no formal preparation for work with a special education population, but finds it a natural and rewarding fit for her:

> I had just come in. I had never worked with special kids before. I had thought about it. I had even called up State because I was thinking about going back and working on a master's. And I thought about doing it in special ed., but I never got around to doing it. So I got this class and there they were. I was kind of thrown into it. It was just like a part of me, it wasn't hard to get into it all. I really love it. It's like I have a whole new family. It's another family for me. It's natural for me. It's just natural. (VA023)

Other teachers tell tales of the defeat and frustration they experience when asked to teach in situations that overwhelm their knowledge and diminish their confidence. When Olive Roark was first assigned to teach three periods of ESL English, she wrote on the back of her survey for that year:

> I consider my main area of teaching Business. I am confident and a great teacher here [in Business]. My ESL classes are being taught for the first time. I found out the week before school started. I had what everyone said was a poor text, no course outline to follow, no supplementary materials, and no knowledge of how to teach it. (ES066F)

The Teachers' Response: Hustling and Hanging On

Program declines and policy shifts introduce a measure of uncertainty and insecurity that seem likely to affect individual performance and commitment. At one level, this is a question of employment security. Teachers face layoff or involuntary transfer when there is insufficient enrollment to sustain a position. More typically, however, uncertainties, insecurities, and perceived challenges are expressed by teachers not in terms of "having a job" but in terms of control over specifics of the teaching assignment: course content, full-time or part-time assignment in one's specialization, student placement practices, the composition of classes, and resources for maintaining or expanding a program.

Overall, program decline and teachers' corresponding uncertainty over teaching assignments is experienced as an individual rather than an institutional phenomenon, met by piecemeal accommodations rather than collective pursuit of new directions. Some teachers have pursued small sources of supplemental monies or donated materials that bolster existing courses. Others have sought external funds that support all or part of a teaching position. Vocational programs are expensive. At their best, they require large and specially-designed classrooms. They call for extensive, up-to-date equipment maintained in a state of good repair. They employ consumable materials—food, textiles, supplies of lumber, metal, paper, film, and ink. Most of these teachers tell stories of the hustling and scrounging they must do to equip their programs.

In two schools, ROP courses play a large role in maintaining teacher positions and course offerings. At Oak Valley, ROPs in the three main vocational departments have declined in number (twenty-five to twenty-one over the past three years), but have increased as a percentage of all vocational offerings.[19] At Valley, ROP courses have increased both in number and as a percentage of all available courses. But the organization and support of ROP rests on individual shoulders, and ROP initiatives tend to be one-teacher operations. When the teacher goes, so does the program; or, conversely, when the program is discontinued, the teacher's position is placed in jeopardy.

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19 This figure does not include the newly-instituted ROP in television and film production developed by a member of the English department.

A small number of teachers have begun to examine new possibilities for course development, often linked to high technology. Roger Townsend's new course on "Engineering Technology," linked to his school's evolving science magnet program, is one example. Faced with the imminent cut of his small engines repair program, a teacher at Oak Valley has turned to allies at the district level to carve out a place in a proposed new Applied Technology program. (If adopted, the program would be a companion program to Principles of Technology, which has gained the support of the science departments.)

More commonly, however, teachers employ a straightforward attempt to market individual courses and programs to administrators and to students. One business teacher, commenting not only on her own experience but on the experience of colleagues around the state, maintains, "Those of us that have a game plan for students and can sell it, are not losing our classes." Beth Elgar maintains that it is her priority "as long as I'm coordinating this program," to see it retained as "a very strong business program." But the very strong program turns out to have a certain chameleon-like character; maintaining a program "doesn't mean that we can't be flexible enough to go the way the administration feels we should move." In this instance, flexibility means tailoring courses to accommodate the Spanish-speaking population. Despite her initial difficulty with her assignment to teach limited-English speaking students, Olive Roark has now redesigned her keyboarding course to accomplish some of the same aims and accommodate the same student clientele as the ESL English classes. She has thereby maintained her course enrollments, though it is unclear how a course titled ESL Typing compares to courses taught by ESL specialists. Roark reports,

> This year I have instituted—basically it's an ESL keyboarding class—but it's supposed to be a class where we will work on English vocabulary, emphasizing the English skills more so than the regular keyboarding course would. We'll also, a little bit later on in the course, try to pick up some of their Science vocabulary and perhaps some of their Social Studies vocabulary and work on that. (ES066)

Others attempt a similar kind of coat-tail campaign to attach their courses to school-level priorities or program developments in other departments. At Esperanza, for example, both the industrial arts and business departments see the evolving science magnet as both a competitor for enrollment and resources, and as a possible justification for vocational courses oriented toward science and technology. Roger Townsend saw in the science magnet an opportunity for new course development:

> I always wanted to write an engineering class. I would teach material sciences. I would teach math. I would teach physics. I would teach those kinds of things to kids who wanted to go into engineering and also get them interested in a career. Saying "I'm a junior engineer." Some pride in that. "Even if I don't get good grades right now, I can go to junior college, major in junior engineering, get an AA degree and go on to Polytechnic or Berkeley or San Jose State in engineering." (ES043)

Townsend was able to get science credit for the class and to enroll two periods, but gave up one period of regular drafting in exchange. His colleague Ed Gordon is somewhat skeptical that the course will achieve Roger's aims:

> Now Roger Townsend developed this whole science curriculum. They have two classes that are a cross-over between science and engineering. So that's a real big effort and I knew this was going to happen. He ended up getting all the bottom-end science kids that the science teachers didn't really want to deal with. So he's got probably an outstanding curriculum, but students who would rather comb their hair and walk around than pay attention to what he's trying to do. So it's going to be a long year for him, in at least one section. (ES030)

These adaptive strategies, entailing changes in course content and the development of wholly new courses, are among several survival strategies that emerged in teachers' accounts. In other efforts, vocational departments attempted to meet the academic departments on their own ground by securing course requirements in vocational topics or by seeking dual credit for some courses. Such strategies require that vocational teachers persuade their academic colleagues and school administrators that selected vocational topics are of sufficient import to be required of all students, or that certain courses are sufficiently "academic" in content to warrant academic credit. In the competition for enrollment, courses that meet requirements or courses that can offer academic credit are advantaged. These have not typically been successful strategies, except in cases where academic departments (particularly math) are content to have others teach remedial classes that will satisfy graduation requirements for the lowest-achieving students. Xenia Young tells how her business department failed in its effort to introduce a requirement that all students take a one-semester keyboarding class; the department's "big push" failed when other departments saw the proposed requirement as consuming still more elective choices for students and thus affecting their own enrollments:

> It went to the curriculum council and people said yes, it's a good idea, everybody should take it, but all of a sudden that means less time for music, that's less time for art. That student who is taking an extra semester of

English because they just want to take literature, something special, that cuts out my program, no, no, no, you can't have the requirement. (ES024)

A less controversial strategy (except when pushed to extremes) is to market courses directly to students. One teacher insists that "we're not antagonistic with anybody about [the extra academic requirements] but we're all doing our publicity, saying 'Come here, come here. We have something to offer you.'" Those teachers with fully enrolled classes tended to attribute their success to a carefully cultivated word of mouth reputation among the students. Favorable word of mouth advertising must be earned:

> I'm in my twenty-third year teaching—and the best thing is to be the best possible teacher I can; [it] is what keeps my enrollment up. Having something to offer, being prepared, being organized, expecting the students to pull their weight. Because in the end they can measure: "Boy, we did a lot, we covered a lot of ground. We did learn. Look at all of this." And by having that, that it was worth their time, most of my enrollment . . . comes from word of mouth. (RA042)

Numerous "brochure" stories suggest both the amount of effort that may go into marketing activity and the ways in which individual and departmental marketing schemes may be defeated. A business teacher explains that her department's brochure is distributed to students at the junior high schools, and to the high school students in the spring as they plan their program for the following year. But the use of brochures depends to some extent on the cooperation of counselors and administrators who prepare handbooks, orchestrate student advising, schedule student meetings, and confer with parents. When those administrators and counselors are supportive of vocational programs, brochures and other marketing appeals may operate as intended (though we have no evidence from administrators, counselors, or students to that effect). But teachers' marketing efforts can readily come to naught:

> Last year the brochure was going to be printed to be taken to the junior high schools. We have our own brochure that we have done and there was another one that was a district-wide catalog kind of thing. And we were told that if we wanted a supplement to the catalog, a one-page stick-in kind of thing, that we could do that. So I took a part out of our regular brochure that shows freshman, juniors, seniors—it shows the whole chart thing and it shows where you can plug in these electives into your program along with all your requirements. And the school catalog came out and our diagram was lifted and changed. . . . And our supplement was stuck onto the bottom of somebody else's page. It was just a little one-paragraph. So there was nothing eye-catching about it. We were greatly upset by that. (ES024)

> The administrator for that grade level will come and make a presentation for that grade level. Last year . . . she went through all the things you could take and she would make little comments about many of the curriculums, but there was never anything said about home ec. She mentioned art, business, she mentioned choir, the music department—what a great thing the music teacher had done—but never a thing about home ec. (ES045)

Vocational teachers are thus left largely to their own devices to sustain a full-time teaching assignment composed of courses that both they and students find satisfying. Four consequences of this situation seem readily apparent. First, broad questions of institutional purpose are obscured by pressures to find a place for individuals; so, too, are capacities for curriculum policy at the district, school, and departmental level. This was true even at Oak Valley, where the district prides itself on curriculum coordination and where teachers in academic departments describe (and occasionally complain about) a powerful set of constraints on individual choice over matters of curriculum. With respect to vocational education—its conception and aims, its offerings, or its relationship to the academic program—none of these comprehensive schools could be said to devote institutional attention to overall program coherence and direction in ways that might broaden and deepen the shared sense of what is "vocational."

At every level, the system has operated to support individual teachers in any move that appears likely to secure a full-time teaching assignment in the short term. In developing his photography classes, the drafting teacher at Oak Valley has moved in a direction consonant with his own background and interests. From a departmental or institutional point of view, however, a more powerful move might have been to pursue the resources and the teacher capacity to do computer-assisted design and drafting. Ironically, computers donated to the school by its "adopt-a-school" partner, a major engineering technology firm, have been dedicated largely to the math department. In principle, entrepreneurial ventures or crossover assignments might provide the occasion for joint planning, foster more extensive and intensive forms of collegial exchange, and open up possibilities for experiments with an interdisciplinary curriculum. We have no evidence that they have done so in these cases.

A second consequence of an individualistic rather than institutional stance is to further fragment the secondary curriculum. In saying this, we are not advocating a kind of seamless, perfectly coherent intellectual program for the school; certainly there are disadvantages as well as advantages to intellectual coherence in a school curriculum. But

the impetus that results in a patchwork of courses, short on depth and breadth, cannot be traced to a principled defense of an eclectic and dynamic curriculum. It can be traced far more readily to conditions that separate theory and practice, study and work; these are conditions that also result in labeling as *vocational* education, courses of study that should not conceivably be held to such a standard.

Observers of high schools have drawn attention to the way in which academic teachers' own entrepreneurial activities could result in small empires or market niches of quite idiosyncratic course offerings that preserve student enrollment and maintain teacher interest.[20] For teachers of academic subjects, electives have long been a way of maintaining personal autonomy with respect to curriculum and ensuring a motivated student clientele. The path that vocational teachers are following, as they put forth proposals for funds and equipment, and as they market their ideas and their courses to staff and students, is one that is well-trodden in American secondary schools. In California, the entrepreneurial strategy has taken new twists since the advent of the state's reform legislation in the early 1980s. In a period of tightened graduation requirements, the opportunity to construct a course load of specialized electives is certainly less present. The shift in the state's graduation requirements has resulted in increasing the pressure on all students to enroll in courses with academic titles, offered for academic credit.

Third, the individualistic survival-oriented mode helps to satisfy the demand for individually well-supplied *classrooms*, but results in a plethora of mismatched and uncoordinated resources that present further obstacles to integration of aims and programs in the *school*. Marketing and idiosyncratic course development may keep teachers and programs alive, but they do not necessarily provide a more fertile ground for joint work among teachers, or a more robust experience for students. For example, business departments have capitalized on the student market for a basic level of computer literacy, and on the place of word processing and spreadsheet applications in entry level secretarial positions, but the computers they use are typically different from those used by the math and science departments. Indeed, high status work with computers (and access to the best equipment) may be reserved for the traditional academic departments.

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[20] See, for example, Cusick (1983), Finley (1984), and Neufeld (1984).

Finally, the individual survival pattern places an extraordinary personal demand on individual teachers. All the teachers who had successfully built programs through small grants, bartering, fund raising activities, or other forms of entrepreneurial activity (or what teachers call hustling and scrounging) take considerable pride in what their efforts have wrought. Nonetheless, the pressure to scrounge seems endless and little recognized by the institution at large. The graphics arts teacher at Valley, who is trying to add another six to ten computers to the two he now has, complains, "The biggest thing I really get tired of is scrounging. Why is it left to me to try and present a better program to my kids? It's left up to my ability to go out and scrounge and bring up my equipment. . . . I don't think that's right."

Both pride and a sense of futility accompany teachers' stories of hustling. Behind the individualistic pattern of teacher survival is an implicit institutional policy. Roger Townsend, for example, is convinced that there is a hidden policy to eliminate industrial arts from the curriculum. He does not object to the science emphasis at his own school, but asks, "Okay, where is the industrial arts magnet in our district? If they wanted it to work, they would make it a magnet." Townsend, like many others with whom we spoke, would prefer to think in terms of building a program, but is left doing what he can to hold on to single class offerings:

> They have perfectly good teachers in the electives and what they're doing is, we don't have enough kids to fill all the electives. We've got four really good electives programs but they can't fill those programs. . . . You can't field a good program unless you have enough kids. And [the principal] keeps on this idea that we're a comprehensive school. (ES043)

Vocational education as it is presently conceived is not an arena of growth in these schools. In those schools where staffing and program offerings remain relatively stable, like Valley and to some extent at Esperanza and Rancho, vocational education serves other prominent goals or problems—like instruction of the limited-English speaking or special education student. Roger Townsend at Esperanza remarks, "They're happy to get VEA funding but they don't support vocational education."

One might argue that the shift in course configurations in favor of more academic offerings for all students reflects a belief in preparing for work by reinforcing academic content knowledge and abstract reasoning (or other higher order) skills. Such a view is supported by the widespread emphasis on basic skills, good work habits, human relations,

and academic achievement among the goal profiles for the five schools. Further, it is bolstered by the proliferation of vocationally oriented community college programs in California—allowing the high schools to narrow their mission, concentrate on academic skills, and push more targeted vocational preparation upward in the system. In the short term, however, patterns in the content and clientele of vocational education in comprehensive secondary schools cannot be seen as evidence of a self-conscious strategy to reconceive the nature of preparation for work, or the relationship between the vocational and academic elements of schooling.

CONCLUSION

It is one of the ironies of the past decade's reforms that vocational purposes and programs enjoy only marginal status at a time when reform movements are propelled by the specter of diminishing economic productivity and national competitiveness. In *Work on the Margins*, we have explored two dimensions of school context that contribute to the peripheral nature of vocational education in comprehensive high schools.

First, the purposes and priorities of these comprehensive high schools tend to be ordered in ways that concentrate symbolic acclaim and material resources on academic courses or teachers. An institutional orientation toward the college bound permeates these schools, diminishing the contributions of vocational and other non-academic teachers, and reinforcing long-standing dichotomies between theory and practice, and between intellectual and practical endeavors.

The value placed on college bound students creates the standard of worth both for students and for teachers. The symbolism surrounding the phrase "college bound" marginalizes the non-college bound students, teachers, curricula, and goals by denying them an affirmative identity. Vocational courses and the students they enroll are not work-oriented in any favorable sense, but are emphatically non-college bound. The emphasis on college attendance diminishes the prestige felt by teachers whose preferred aim is not only to prepare students for work after high school, but to supply all students with a range of technical competence and practical reasoning capacity that extends beyond what is usually offered in academic classes. It also diminishes the capacity of vocational teachers, individually and as a group, to exert influence in the larger institution.

Teachers of industrial arts, business, home economics, or vocational agriculture are left to seek alternative grounds on which to establish their contribution or to make claims on school resources. They do so largely by carving out a niche defined by service to those students who prove least successful in the academic curriculum—the "low and the special"—and by emphasizing priorities that are more readily labeled as "life skills" than as "work education." The main contribution made by vocational teachers in these comprehensive high schools is to absorb large numbers of those students who have the greatest difficulty in conventional academic classes—generally the limited-English speaking, special education, and remedial students. Not surprisingly, vocational teachers emphasize the "life skills" rationale for their courses, and dwell less often on purposes that are exclusively vocational. The campaigns for legitimacy that they wage bring to the foreground fundamental questions surrounding the differentiated curriculum, and feed the debates regarding what we consider basic in the secondary school curriculum.

Second, the present configuration of staffing, course offerings, and student placement results in a compressed curriculum that teachers frequently find difficult to defend in terms of preparation for work. The purposes of genuine work education are further compromised, as the explicit aims of vocational education are subsumed by other purposes and other dynamics, mostly having to do with responses to academically marginal students. Only the most tenuous connection with work is apparent in the reduced and fragmented vocational course offerings, the split teaching assignments, and the isolated general purpose electives (e.g., independent living, photography).

Ironically, the features of the compressed vocational curriculum underscore the ways in which the school learning environment may differ dramatically from learning in out-of-school environments, as well as from the task demands encountered in real work situations. It remains unclear how we might make the world of adult work, in all its intellectual, emotional, and physical manifestations, more visible and meaningful to adolescents. Vocational and academic teachers differ in the legitimacy they grant to specific vocational preparation and to the teaching of specific technical skills. But despite those differences, there is also substantial common ground between the two groups. Vocational purposes, broadly conceived, are represented in the value that both vocational and academic teachers assign to a broad combination of basic skills, academic achievement, and favorable attitudes and habits of work. The fruitful ground for considering the integration of academic learning and preparation for work would appear to lie in two arenas. First, we

find shared interests in teachers' widely shared orientation toward good work habits and other related skills and dispositions. These might be expressed as conservatively and narrowly as "habits of punctuality" and "following directions" or expressed as broadly and deeply as the work relationships that Lave and Wenger (1990) explore in their treatise on situated learning and "communities of practice," or that Simon et al. (1991) present in their analysis of the social relations of work. Second, vocational and academic teachers both aspire toward a pedagogy sufficient to cultivate students' capacities for complex reasoning and problem solving; for many, however, the connections between abstract principles of "critical thinking" and the specifics of curriculum-in-use remain uncertain.[21] Shared interests in making those connections more certain presents an opportunity for the reconsideration of vocational and academic purposes, programs, and perspectives.

In *Work on the Margins*, we have concentrated on presenting the world of high school teaching as it is experienced by vocational teachers in comprehensive high schools. That world is demonstrably changing in ways that many of those teachers find it difficult, even painful, to confront. In the interests of presenting teachers' accounts, we have devoted little attention to the possibility that the withering of traditional vocational education might indeed be a favorable development. Rather, we have tried to portray the perspectives and circumstances that would enable or constrain a reconsideration of the ways in which vocational purposes are pursued in the comprehensive high school. In a second paper arising from this study, titled *Two Worlds: Vocational and Academic Teachers in Comprehensive High Schools*, we will consider the nature of the professional community among teachers, and the way in which the perspectives, commitments, and capacities of vocational and academic teachers dispose them to welcome or oppose new possibilities for secondary education.

What we see in these five schools lies some considerable distance from proposed models for integrating vocational and academic education. Such models are organized both to import greater academic content into vocational programs, and (perhaps less often or less successfully) to grant vocational purposes greater legitimacy in academic institutions. With the exception of models built solely around the individual implementation of curriculum packages, all require substantial investments of symbolic and material resources that are not

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[21] An example of the problematic relation between pedagogical practices and students' critical reasoning in academic classrooms is Schoenfeld (1988); for an attempt to trace the relations in vocational classrooms, see the case study of an interior design class completed by Stasz, McArthur, Lewis, and Ramsey (1990).

within easy reach of the vocational teachers in the comprehensive high schools we studied. That is, they require that administrators, teachers, and others envision an altered conception of the academic curriculum, the nature of academic and practical experience, and the relation between the school and the larger community. It is that impetus that this analysis is intended to serve.

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APPENDIX A
FIVE SCHOOLS[1]

Our inquiry into the work lives of vocational teachers is part of a larger investigation into the multiple contexts that shape secondary teaching. Over a three year period, we made repeated visits to sixteen public and independent schools in California and Michigan. The schools vary in size from fewer than two-hundred students to nearly three thousand. During those visits, we interviewed administrators, department heads, teachers, and students. We observed in classrooms and staffrooms, in department offices, lunchrooms, workrooms, and hallways. Annual surveys were distributed to all teachers in each site. These surveys replicate certain items employed in previous large-scale national studies (High School & Beyond, NELS 88), and, thus, link parts of this small study to a much larger database on high school teachers and students.

This paper centers on five public comprehensive high schools, all located in California. They are schools that account for the largest share of vocational education offerings in secondary education. That is, the vast majority of secondary students attend public comprehensive high schools. In our focus on the comprehensive high school, we do not deny the contributions of specialized vocational centers or other kinds of specialized schools[2] but choose to concentrate on those arenas in which gains would reasonably affect the largest pool of teachers and students. In those schools, we made an effort to interview and observe all vocational teachers in the business, industrial arts, and consumer/family (home economics) departments. We also interviewed vocational agriculture teachers in two of the schools. Of the nearly sixty teachers who were candidates for this study over the three years, thirty are represented in the survey data and thirty-five provided us with interviews. This paper concentrates on the views and circumstances of vocational teachers, but also contrasts them with the views and circumstances of teachers in the core academic departments (e.g., English, social studies, math, science, and foreign language).

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[1] The names of all persons, schools, and communities have been changed to preserve confidentiality and anonymity. The larger study in which these five schools are embedded has been conducted by the Center for Research on the Contexts of Secondary Teaching (Stanford University), with funds from the Office of Educational Research and Improvement, U.S. Department of Education.

[2] See, for example, the overview and case examples of specialized "occupations" high schools assembled by Mitchell et al. (1989); Stern and Dayton's (1990) description of vocational academies; and the examples of eight integrative models described by Grubb et. al. (1991).

Most vocational teachers were eager to talk to us and willingly made time for us during the school day. Some stayed well after the end of the school day to talk. They completed surveys, sometimes appending notes. In the largest of our sites, the survey response rate among the vocational teachers was one hundred percent, and department heads made special efforts to help us schedule individual interviews, group interviews, and attendance at department meetings. Teachers invited us into their classrooms, and welcomed us into the more informal exchanges between classes and during breaks. We were left with the impression that this was a group without a forum, one which interpreted their participation in this study as a way to make themselves heard.

The five comprehensive high schools are alike in placing vocationalism among a broad range of goals and interests they pursue through their curriculum, extracurricular offerings, and special programs. In other respects, these schools have important and distinct differences that directly or indirectly affect the value attached to vocational purposes and programs, and the conditions under which vocational and academic teachers work. The schools involve us in three districts, each with its own history as a professional environment for teachers, and each with its characteristic stance toward vocational education. The schools vary in the size and composition of their student population and teaching staff; they vary, too, in the special issues and problems that they confront, the reputation they enjoy in the district and community, the professional relationships that dominate the school culture, and the resources for (or constraints on) program development. The descriptions that follow highlight the main "story" of each school, seen from the perspective of vocational purposes, programs, and personnel.

Oak Valley High School

At suburban Oak Valley High School, the largest school in the sample, the administration and the academic subject teachers pride themselves on the school's reputation for academic excellence and prowess in extracurricular activities. The school has recently been singled out for national recognition. One of three high schools in a growing district, Oak Valley is surrounded by hillsides on which very large homes spring up in a virtual frenzy of new construction.

Despite pressures toward a predominantly academic curriculum, the school has been able until very recently to maintain a reasonably large full-time teaching staff in four vocational departments. In 1988-1989, eighteen of the school's one-hundred-thirty-six

teachers (13%) worked in designated vocational programs in four departments—industrial arts, vocational agriculture, consumer/family, and business. Of those, only two were less than full-time. The numbers are now dwindling, however. By 1990-1991, four positions had been eliminated and three of the remaining teachers were teaching part-time in other departments or working on special assignments at the school level. The available program in industrial arts is steadily diminishing, while immediately outside the school grounds the local economy thrives on construction trades, architecture, and engineering.

The central issue in this site is the relatively narrow view of vocationalism and the relatively low status of traditional vocational preparation in a school and a community that take pride in a college bound population. As traditional programs diminish in this school, the question might be posed: Are we witnessing decline or transition? The school's new principal lists "career infusion across the curriculum" among his aims. It is not yet clear what the principal might mean by such a phrase, and less clear how teachers will come to interpret it. It does seem clear that the principal is likely to turn first to the counseling staff and to enthusiasts among the academic teachers to develop the agenda.

Onyx Ridge High School

Onyx Ridge High School, less than half the size of Oak Valley and with a more diverse student population, also emphasizes its academic mission and college orientation. Teachers were recruited here when the school opened in 1982-1983, and had a voice in designing the facilities and program. Academic teachers consider themselves the "creme de la creme" of the district's workforce, and consider the school to be a highly desirable assignment, a place they would be pleased to stay until retirement.

The school is located in an affluent, mostly white community on the edge of a large urban district. Pressures on the school come largely from parents in the immediate neighborhood. Minority students represent thirty-seven percent of the student population, but most are transported from distant parts of the city. These students represent ethnic but not linguistic diversity (fewer than 5% are classified limited-English proficient [LEP]). Students who arrive by bus constituted about one-fifth of the student population in the first year of our study, and about one-quarter by the third year.

Five of the school's fifty-six teachers are distributed across three vocational "departments," although numbers this small make it difficult to detect a department in any

meaningful sense. Two teachers hold full-time positions in a consumer/family department that includes a state-funded Regional Occupation Program (ROP) in child care. This school, like Oak Valley, incorporates a preschool on campus. Under the heading of industrial arts, one teacher operates a popular sequence of courses in graphic arts (including ROP), while the other has, until 1990-1991, managed a part-time schedule of wood shop classes populated, it seems, by students who have nowhere else to be. By spring of 1991, this woodshop teacher was teaching a full-time schedule of basic math classes. One lone business teacher fills a teaching schedule with introductory level computer classes. The principal is reluctantly considering "bringing back" offerings in auto shop, not because they fit with her vision of what the high school program should be (they do not), but because she is pressed by "the numbers" to find class placements for students whom teachers say are ill-prepared to succeed in the school's academic courses.

The "vocational" presence on this campus is slim, and there is little support among administrators or teachers to expand it. Rather, support for non-academic classes is in the form of general purpose electives. The graphic arts and early childhood education programs are symbolic of this preferred orientation toward courses enrolling a wide range of students (from those in advanced placement classes to those with no plans for higher education). Some of those courses, including graphic arts, are reasonably well-connected to employment opportunities but are not intended as an alternative to college attendance or as a path into a single vocational domain. The wood shop classes, by contrast, exhibit the much-denigrated dumping ground pattern, while the single business teacher supports a full-time load of entry-level computer literacy and computer applications courses that fulfill a graduation requirement.

Valley High School

Valley High School, closer to the urban center, lost its highest-achieving students to Onyx Ridge when the latter opened nearly ten years ago; in some respects, the school has been struggling to recover ever since. Academic teachers see the school as having suffered a deleterious change in student population when Onyx Ridge High School opened in 1982-1983 and "creamed off" the best students from Valley. The vice principal sums up the problem that Valley shares with schools in other districts with proliferating magnet systems: "So we had a school with declining enrollment, a school to the north that took the best, and we were not a magnet. Valley was considered a leftover school."

In the wake of this change, teachers encountered increased enrollment of minority and special education students. More than half (60%) of the student population consists of students of various minority groups, mostly Hispanic. Nearly half of the students (43%) are eligible for English as a Second Language (ESL), bilingual, or special education programs. There has been a steady increase in enrollment in the MITA (Minority-Initiated Transfer Arrangement) program. More than half the students are eligible for Chapter 1 assistance. Valley is also a regional center for special education (18%-20%).

The vice principal interprets the school's major challenge as maintaining an academic program for a student population not traditionally college bound and not well-prepared academically for high school. [The principal, a former industrial arts teacher, is considered to be "good with the kids" and skillful in his communications with the community; the vice principal, who was our main contact throughout the study, was brought to the school "for the academics."] School resources have been devoted to maintaining academic achievement and to increasing college attendance rates for minority and low-income students. The example that springs first to the mind of the school's leaders is the PEP program (Personal Effort for Progress). The benchmark of success for the program is the extent to which it qualifies minority students for the University of California. Reported college acceptance rates for graduating seniors are high, but the graduating class itself is small—a high percentage (28%) of the school's students drop out before graduation. The dropout rate is highest for Hispanic students—the school's fastest growing group.

With a present enrollment of nine-hundred-fifty, Valley is the smallest of our five comprehensive schools. The school's block schedule (two-hour blocks for four out of five days, and a conventional schedule on the fifth day) would seem to open up multiple opportunities for curriculum integration across academic disciplines and between vocational and academic programs. Nonetheless, the curriculum appears to be developed and taught along traditional subject-specific lines—in part, it would seem, because of the school's orientation toward the UC admission requirements. The problem of curriculum range and depth seems to be defined in terms of available offerings within subjects.

The school's fifty-six teachers include seven (13%) who teach conventional vocational topics, nearly half of which are organized as ROP offerings. Two of the ROP programs are dedicated to special education students. Among our five comprehensive

schools, Valley comes the closest to representing traditional vocational education in its declared purposes, program organization and content, orientation of teachers, and stable pool of students. Vocational teachers view the administration as generally supportive of their work, and are optimistic about their ability to sustain enrollment in their programs.

Esperanza High School

Esperanza High School has a thirty year history of dramatic changes in its institutional persona. Following a period in the early 1960s when it was the premier high school in the district, the school endured several cycles of decline and recovery. The school's leaders present the school as being on the upswing, despite dramatic and demanding changes in the school's student population. The story here is one of accommodations to ethnic and linguistic diversity. In the period 1986-1988, the school witnessed a shift from a nearly homogeneous population (92% middle class white) to a very mixed one: fifty-eight percent low income minority students, many of whom live in neighborhoods distant from the school and many demonstrating little facility with English. Nearly one-third are officially classed as LEP or NEP (limited- or non-English proficient). In the past three years, the school has acquired four ESL specialists, but the principal considers the school to be short on staff who are specially trained to work with limited-English-speaking students. The school has turned to vocational teachers to resolve part of the staff shortage in ESL; vocational teachers, in greater proportion than most academic teachers, absorb ESL enrollment in their classes.

When we began our study in 1988, the school listed nine teachers in four traditional vocational departments—agriculture, business, home economics, and industrial arts. Five carried a full-time load in their vocational specialties, three had supplemental assignments in non-academic areas, and the specialist in vocational agriculture divided his time between two schools. In the 1990-1991 academic year, the school identifies nine teachers who teach at least part of their schedule in the vocational areas. Only three are full-time. In agriculture, one teacher continues to split his assignment with Rancho High School. Of the remaining eight, some teach part time in other departments (business teachers teach English ESL and introductory algebra; the auto shop teacher teaches two sections of physical science), while others fill their schedules with school-level responsibilities.

An issue here will be the place held by vocational interests and vocationally-oriented teachers in a reshaping of the school's mission and program. Formally designated vocational programs and explicitly stated vocational interests are in decline, yet the vocational teachers bear much of the burden of accommodating changes in the student population. The school's transformation officially revolves around plans for a science magnet. Ironically, the industrial arts teachers have had little success in interesting the science department in a role they might play in an experimental science program. Here as in the other comprehensive high schools, subject segmentation prevails and vocational interests are seen in relatively narrow terms.

Rancho High School

Rancho High School opened in 1976 with the district's agreement to provide staff with wide autonomy to design a curriculum responsive to "student needs." The staff abandoned traditional departmental organization in favor of three learning houses, each of which combined multiple subject disciplines but were not otherwise distinguished from one another by any special purposes, curricula, or student clientele.

Over the years, these structural arrangements have eroded and teachers have reasserted their subject specializations and have moved toward department affiliations (see Siskin, 1991, on the resilience of subject matter organization at Rancho). The causes are several: cuts in the supplemental state resources that enabled interdisciplinary planning; state curriculum frameworks that underscore subject matter divisions; and staff turnover that has jeopardized continuity of the main ideas, commitments, and relationships. A certain legacy remains. Teachers still report an unusually high volume of crossdepartmental communication and a shared commitment to meeting the needs of a diverse student population. However, the frequency of communication and kinds of communication needed to create and sustain an integrated curriculum seem unlikely to be achieved on the schedule now in place, with its severe limitations of joint planning time.

Although situated in a growing, relatively affluent neighborhood, Rancho acquired a growing minority population as a result of a court desegregation order in 1986. More than half of the nearly sixteen-hundred students are minority. In 1989-1990, the school was designated a center for LEP and NEP Vietnamese students—together, these categories account for about thirteen percent of the students. To ethnic diversity is added an element of economic struggle; teachers portray the present student body, overall, as coming from

lower income families, and as not very interested in college. Teachers and administrators claim the transition to the present student population has been smooth, but also acknowledge that the diverse student population has made teaching more difficult.

At Rancho, eight teachers pursue what appears on paper to be a traditional program of courses in industrial arts, business, home economics, and vocational agriculture. And with the exception of one teacher's mixed assignment of geometry and drafting classes, all teachers hold full-time assignments in their areas of specialization. Behind the course titles, however, we find variations in actual course content that are a direct response to the school's profound shift in student population.

Together, these five schools present a range of what we might term "ordinary" urban and suburban comprehensive high schools in California. Each bears the stamp of traditional purposes, programs, and practices; and each is home to innovative impulses in the face of changing circumstances.