CONNECTING COLLEGE AND COMMUNITY IN THE NEW ECONOMY? AN ANALYSIS OF COMMUNITY COLLEGE FACULTY-LABOR MARKET LINKAGES

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EXECUTIVE SUMMARY

Background and Goals of the Study

America's two-year colleges play a pivotal role in providing millions of students with the education and training they need for success in the modern economy. These institutions perform a multitude of tasks, including preparing millions of young Americans for direct entry into the labor market as well as transfer to four-year colleges, retraining and upgrading the skills of older workers, and providing basic education for adults. In an era of structural economic transformation, when the job skills required for success in the labor market are changing rapidly, community colleges are called upon to play an ever more significant role in facilitating students'

school-to-work transition. If they are to be successful in this labor market preparation role, there need to be close links between institution, faculty, and the labor market in terms of program offerings, content of those programs, and subsequent placement of students into jobs. This has been one of the premises (sometimes implicit) in recent changes to vocational education policy reflected in federal legislation such as the Perkins Act of 1990 (Perkins II) and the School to Work Opportunities Act of 1994, as well as other local and state reform initiatives.

For decades, some colleges have made extensive use of local business resources in program and curriculum development, and spurred by state and federal legislation have recently sought to improve these connections through school-to-work activities, including apprenticeships; co-op programs; work-based learning; and contract education, which emphasize coupling classroom work to applied experience in local business, government, or nonprofit settings. Such efforts demand that postsecondary vocational instructors have high-level, up-to-date technical skills, and are keyed in to changing labor market needs. However, despite the apparent importance of such activities, very little is known about their extent, which types of faculty members participate, and the barriers to making connections.

In this document, we report evidence from a study of community college faculty in which linkages to their local labor markets and wider communities are explored. We take as given the premise that faculty linkages are critical to the success of vocational education reform and required to integrate work experience with traditional classroom education. Our overriding goal is to understand how faculty are linked to their local labor markets and communities, how strong these links are, and what can explain these links. In particular, we are interested in what institutional policies and strategies seem to promote linkages among faculty, and what the barriers to building labor market connections are.

Methods

We pursued both a quantitative and qualitative data collection strategy. First, in fall 1995, we administered a survey to approximately thirty-five hundred community college instructors in about one hundred public institutions nationwide. This survey, with its large-scale and national coverage, gives us a unique opportunity to generalize with some confidence about the behaviors and attitudes of community college faculty. To our knowledge, this survey provides the first systematic evidence on the issue of labor market connections.

Our survey instrument was intended to collect data on faculty backgrounds and labor market links in the 1994-1995 academic year. Background items covered instructors' personal characteristics, educational background, work experience, and professional status. Other questions concerned faculty's involvement in various college reform initiatives and use of innovative teaching practices; attitudes toward their job and institution; and the nature and extent of links to their institutions, teaching field, the labor market, and

community. In focusing on links, survey items covered the type and level of effort of the links, and some of the supports (e.g., professional development incentives) and barriers to constructing links. We asked about four domains of linkages: faculty pedagogical/curricula activities, career assistance, professional and community activities, and institutional activities.

The survey was administered by mail in late October 1995, and data collection continued until April 1, 1996. The overall response rate was about 64% and the final sample consists of 1,725 faculty in ninety-two institutions. A comparison of our survey respondents with data from the National Survey of Postsecondary Faculty (NSOPF), collected by the National Center for Education Statistics (NCES), shows that our survey sample is broadly representative of community college faculty nationwide.

Second, we conducted four institutional case studies designed to supplement the survey by describing how diverse community colleges connect to local labor markets and what factors inhibit or facilitate such linkages. Sites were selected from our survey sample, based on initial analyses of faculty responses. Institutions provided diversity in urbanicity and location, type of local labor markets, institutional size, and institutional mission. Four schools were studied in three regions of the country: southern California, a midwestern city, and the rural south. Two researchers spent two days at each institution, talking with twelve to thirty different individuals--presidents, administrators, and faculty--during the spring or fall of 1996.

In order to assess what factors were most important in explaining linkages, we analyzed our survey and case study data using various methods. For example, we used multiple regression to determine which individual (sex, race/ethnicity, age, years of experience teaching in community colleges and in the current institution, degree level, rank, tenure status, part-time status, primary teaching field) and institutional (region, urbanicity, total enrollment, governance structure) characteristics had independent effects on faculty's linking behavior. We also analyzed the faculty survey responses to two additional sets of variables which provide further clues as to variation in connecting activities: (1) perceptions of barriers to building linkages; and (2) perceptions of the institutional climate and support in providing labor market information and promoting linkages. Finally, we drew findings from our case study notes.

Findings

Our case study and survey analyses yielded six main conclusions:

1. Faculty and administrators agree that community college linkages to local labor markets are beneficial and important. Although community college faculty are connected with local labor markets in a variety of ways, these linkages are generally ad hoc and informal in nature. Few institutions have developed systematic plans or strategies for developing and maintaining faculty linkages to local labor markets, or for using existing linkages to improve the quality of education.
2. Linkages that are relatively easy to establish and sustain are most common; those that require relatively more effort or time

from faculty are less common. Thus, a large percentage of faculty report using business examples in the classroom; far fewer offer students experiential learning opportunities in work environments.

3. Among community college faculty, those who teach in academic disciplines perceive little need for linking with communities and invest little to no time in such activities. Part-time faculty, many of whom have strong community connections, are often unable to use these connections on behalf of the institution, largely as a result of their tenuous connection to the college. Thus, the work of forging connections rests largely with full-time vocational faculty. Unfortunately, the heavy workload borne by vocational faculty leaves them with little time for supplemental activities of any kind, and the work of linking to local markets is only one of many demands on their time.
4. Institutional connections to community do not automatically or necessarily provide individual faculty with connections and, thus, have little impact at the classroom level in degree or certificate programs. For example, several of the institutions we studied had strong institutional connections with local communities as manifested in growing contract education programs; but the "lessons learned" in such programs had, at most, indirect effects on the curriculum and student services provided in for-credit vocational programs.
5. Vocational faculty are motivated to link with local labor markets because such connections are required for their programs to survive, especially to place students in jobs or in required practica and internships. Nonetheless, faculty receive little encouragement from their institutions to build linkages. For example, few institutions reward or recognize faculty efforts to link with local labor markets, provide professional development to help faculty develop skills in linking, or even reimburse faculty for the direct costs they may incur in building contacts with local employers (e.g., attending conferences; travel). Moreover, faculty face many barriers to linking, ranging from a lack of information about local employers to difficulty responding in a timely manner to employers' emerging needs.
6. The community is not a passive recipient of community college efforts to link, but, rather, plays an active role in shaping college-community relations. Linking is easiest when the local labor market is strong and stable. Employers in depressed economic areas have little motivation to link with community colleges because they have little need for new employees. Communities with large numbers of small businesses or an unstable economic base pose challenges to establishing and sustaining meaningful linkages.

Conclusions

While we find some variation in the extent of faculty connectivity across institutions, and hence by type of labor market served, geographic location, governance structure, and so on, our picture of linkages is primarily one of individual efforts by particular instructors. Although institutions may have many links to the labor market, this may not affect what happens in the classroom. Academic faculty rarely undertake connecting activities, and there are few formal incentives for vocational faculty to link. Rather, the latter are motivated by the need for enrollments and successful student placement for their programs.

It follows from this picture, that a first step in improving faculty linkages is for institutional leaders to decide if these connections are important to their institution and, if so, why they are important. Then they need to establish clear goals and develop plans to achieve these goals. That involves clarifying priorities and inevitably making sacrifices in other areas. Their would seem to be a range of possibilities for colleges to help provide incentives for faculty to build links, to remove some of the barriers to establishing connections, to reward and recognize success, and to develop mechanisms to carry institutional links down into departments and classrooms. For example, one difficulty with developing labor market linkages is that full-time faculty have high workloads. With many demands on their time, building connections is simply one of many responsibilities. In line with much previous research, we found that faculty tend to operate in isolation from the rest of their institution, and without much sense of professional identity. Overcoming these factors is a major challenge for effecting any kind of change in community colleges, not just improving links to labor markets or the broader community.

If improving linkages between community colleges and their local labor markets and communities is deemed important by policymakers, institutions need to provide more incentives that might promote such activities. Formally rewarding faculty who develop strong employer links, and greatly expanding the number and range of opportunities for faculty to utilize professional development for linking purposes, would likely have an impact. These changes, if accompanied by efforts to free up faculty time (e.g., through release time or reduced teaching loads), may boost faculty-labor market links. In the absence of new funds, these changes in resource allocation can only occur by reducing funds expended in other areas. For this to happen, administrators and faculty must be convinced of the centrality of such links in providing courses with high-level and relevant skills training for students, and of their importance for institutional mission in the new economy.

INTRODUCTION

Community colleges in the United States are a critical but understudied part of the educational and training system (Cohen & Brawer, 1989; Dougherty, 1994).[1] These institutions perform a multitude of tasks, including preparing millions of young Americans for direct entry into the labor market as well as transfer to four-year colleges, retraining and upgrading the skills of older workers, and providing basic education for adults. In an era of structural economic transformation, when the job skills required for success in the labor market are changing rapidly, community colleges are called upon to play an ever more significant role in facilitating students' school-to-work transition. If they are to be successful in this labor market preparation role, there need to be close links between the institution, faculty, and the labor market in terms of program offerings, content of those programs, and subsequent placement of students into jobs. This has been one of the premises (sometimes implicit) in recent changes to vocational education policy reflected

in federal legislation such as the Perkins Act of 1990 (Perkins II) and the School to Work Opportunities Act of 1994, as well as other local and state reform initiatives.[2] Community colleges have responded with a range of programs, such as Tech Prep, school-to-work, service learning, and cooperative education, which emphasize coupling classroom work to applied experience in local business, government, or nonprofit settings. Such efforts demand that postsecondary vocational instructors have high-level, up-to-date technical skills, and are keyed in to changing labor market needs.

Although recent studies have collected information on the development and effectiveness of work-connected programs in two-year colleges (e.g., Bragg, Layton, & Hammons, 1994; Stern, Finkelstein, Stone, Latting, & Dornsife, 1994), few studies (if any) have focused explicitly on the types and level of effort of formal and informal linkages or connections which individual faculty members have to the workplace. Our study is designed to fill this gap in the literature. We take as given the premise that faculty linkages are critical to the success of vocational education reform and required to integrate work experience with traditional classroom education. Our overriding goal is to understand how faculty are linked to their local labor markets and communities, how strong these links are, and what factors--at both individual and institutional levels--can explain these links. In particular we are interested in what institutional policies and strategies seem to promote linkages among faculty, and what the barriers to building labor market connections are.

To achieve this goal, we pursued both a quantitative and qualitative data collection strategy. First, in fall 1995, we administered a survey to approximately 3,500 community college instructors in about 100 public institutions nationwide. This survey, with its large-scale and national coverage, gives us a unique opportunity to generalize with some confidence about the behaviors and attitudes of community college faculty. To our knowledge, this survey provides the first systematic evidence on the issue of labor market connections. Second, we conducted intensive case studies of four colleges (selected on the basis of survey results), which included interviews with senior administrators and both academic and vocational faculty.

The survey reveals that linkages requiring a relatively low level of effort (such as using business examples in the classroom) are widespread among all types of faculty. Faculty are less likely to undertake more proactive measures (such as taking students to visit local business, government or community organizations or developing new programs with work components), which are time consuming and labor intensive. The linkages that do exist tend to be focused on career assistance. The survey confirms what we anecdotally expected to be true: academic faculty are less likely than vocational faculty to engage in all types of linking activities. Part-timers are also less connected than full-timers. Institutional linkages do not automatically mean that faculty are connected to labor markets, or that students benefit from these linkages. These results were backed up by our interviews and observation in our case studies.

We find that most faculty believe building connections between employers and colleges is important, and that employers are

generally interested in such linkages. Traditional boundaries between programs and disciplines and the competing demands on faculty time emerge as critical barriers to building connections. We also find that there is little institutional support for building linkages, particularly in the realm of formal incentives, due to constrained resources.

The remainder of the paper is set out as follows. In the next section, we elaborate on the underlying premise of the report: that strong linkages to the labor market by faculty and institutions are important for the implementation of vocational education reform and a necessary ingredient to improving the nation's education and training system. We also provide a framework for defining and explaining labor market connectivity. In the section entitled, "Data," we describe our survey and case study methodology. In the sections entitled "The Nature and Extent of Labor Market Connectivity" and "Explaining Faculty-Labor Market Linkages," the results are presented and discussed. The former maps out the type and extent of faculty-labor market linkages, and the latter seeks to explain these patterns. The final section provides some conclusions and recommendations.

BACKGROUND AND FRAMEWORK

Overview

In this section we argue that linkages between educational institutions, their faculty, and the labor market are important in the context of a changing economy. In fact, the importance of such connections has been an implicit premise of recent state and federal policies. We then provide some examples of the kinds of connections which historically have developed between community colleges and the labor market through vocational programs, and provide a way of classifying the types of linkages one might expect to find in this setting. Finally, we focus on the role of faculty in connecting to the labor market and offer a framework for understanding why some faculty might engage in such behavior and some might not.

Why Are Links Between Two-Year Colleges and the Labor Market Important?

The U.S. economy has undergone major structural changes in the past two decades. Intensified global competition and technological developments have increased the need for workers with flexible and technical skills. Some authors have argued that new labor market entrants will need to demonstrate adaptability and a high degree of specialized knowledge (Murnane & Levy, 1996). Workers are more likely to hold jobs for shorter periods than in the past and, over time, workers will require retraining or upgrading of their skills.

At the same time, it is often reported that many employers perceive deficiencies in students' basic literacy and numeracy skills; other evidence suggests that they lack work attitudes and job experience (Grubb & Kraskouskas, 1992). These trends are set against the background of what many perceive to be a weak school-to-work transition system in the U.S., and fragile linkages between formal education and training (Grubb, Dickinson, Giordano, & Kaplan, 1992; Stern et al., 1994). There is also emerging evidence that many young people have difficulty obtaining stable employment (Klerman & Karoly, 1994). All of these points suggest that labor markets and the education-labor market relationship may be changing.[3] In practice, they have been interpreted as a need for closer, reciprocal communication between educators and industry-labor market connectivity.[4] For example, such linkages could help ensure that occupational skills taught in community colleges are up-to-date and useful in the labor market.

Policymakers at state and federal levels underscore the importance of such linkages. For example, the Commission on the Skills of the American Workforce (1990), in their often cited report, *America's Choice: High Skills or Low Wages!*, argues the need for an improved education and training system in the context of changing work and new skill demands; "Goals 2000" calls on educators and employers to develop skill standards together; the School to Work Opportunities Act specifically funds the development of formal partnerships between employers, public secondary and postsecondary institutions, and labor organizations; and Perkins II tried to stimulate Tech Prep and the integration of academic and vocational subjects at both K-12 and postsecondary levels, calling for the broadening of vocational curriculum to cover "all aspects of the industry," making greater use of work experience, and building a "broad career preparation system."

Community colleges are a critical component of this education and training system. They provide millions of students with the skills they need to enter the sub-baccalaureate labor market. In 1994-1995, community, junior, and technical colleges enrolled over 5.4 million students, some preparing for transfer to a four-year undergraduate institution, others completing occupational training, and still others taking classes in basic literacy and numeracy. These institutions potentially play a crucial role in facilitating school-to-work transition. We, therefore, focus on two-year colleges and their linkages to the labor market and community.

Community colleges may link to the labor market at a variety of levels: institutional, departmental and program, and individual faculty level.[5] While formal arrangements are likely to exist at the former two levels, it is individual faculty who interact on a day-to-day basis with students. Faculty have primary responsibility for providing students with the skills they need for the workplace. For this reason, our primary focus is on the behavior of individual faculty members within the overall institutional context.

The first set of questions we seek to answer are about the *types* of links faculty have to local labor markets: How do community college faculty obtain information about local labor markets? What is the nature of their personal and departmental ties to local employers? To what extent, and in what ways, do they provide students with information about the local labor market? What kinds of input, both formal and informal, does local business provide for curriculum planning? The second set of questions deals with

explaining *why* some faculty engage in linking behavior and others do not, and why we observe certain types of activities and not others. Toward this end, we explore the influence of some individual characteristics and institutional conditions and, in particular, the barriers and facilitators of labor market connections.

What Are Labor Market Links or Connections?

Community colleges have a long a history of ties to local business and industry and to the broader communities they serve--in most cases it is part of their formal mission. Dougherty (1994) notes that local initiatives gave rise to most community colleges. Business professional organizations such as the Chamber of Commerce saw colleges as instruments of economic development (p. 127).[6] As college functions expanded, so did the opportunities for connections to the local labor market and community through vocational and community education. Cohen and Brawer (1989) detail the expansion of vocational activities particularly during the last third of this century as spurred by the 1963 Vocational Education Act and the subsequent infusion of federal funds.

Today, a significant proportion of two-year college students are undertaking some form of vocational training, although pinning down the exact number is problematic given that student intentions are often unclear (see Cohen & Brawer, 1996, pp. 228-235; Grubb & Kraskouskas, 1992). Although, many students take only one or two vocational courses, occupationally specific programs are offered by most community colleges. How are these established? "The college staff *presumably* initiate programs by perusing employment trends in the local area and by surveying employers there" (Cohen & Brawer, 1989, p. 212, emphasis added). Lynn and Wills (1994) have argued that schools tend to offer courses more driven by the knowledge and interests of their faculty rather than the changing demands of the labor market.[7] Many programs include some element of work-based learning at an employer or internship or cooperative education type component. The programs themselves are often the major method by which students get placed into jobs in local businesses.[8]

A key type of college-community linkage, at least in principle, is standing advisory committees for specific programs. For example, Bowles and Gintis (1976) have argued that "the connection between the needs of business and the curricula of community colleges is fostered by business representation on advisory boards" (quoted in Dougherty, 1994, p. 31). They meet several times a year to discuss program design and the details of the curriculum. There are also informal avenues for business-college connections, such as faculty presentations to business; administrators' participation in civic, community, and business associations; and student assignments requiring interaction with employers.

In the 1970s, colleges greatly expanded "community education," a range of activities including adult education, basic education, continuing education, contract training, and community services (Cohen & Brawer, 1989). These include courses for occupational upgrading, direct arrangements between an industry or government agency and the college for employee training, apprenticeship

training, JTPA programs, and economic development services. While there is anecdotal evidence that these types of operations have proliferated--particularly contract training partnerships--they are difficult to quantify (e.g., Doucette, 1993; Lynch, Palmer, & Grubb, 1991). However, they represent examples of a highly connected college-labor market relationship.

There is some evidence that linkages have improved as part of recent vocational education reforms which emphasize work-based learning. For example, a study of school-to-work programs found that "the range of direct linkages with outside organizations has become remarkably wide" (Stern et al., 1994, p. 1). More than two-thirds of two-year schools now offer co-op or work experience and one in six offers the classroom component of apprenticeship training. However, relatively small numbers of students actually participated in such highly connected activities. In a survey of 675 institutions, Stern et al. found that only 7.3% of full-time day enrollment students were in co-op programs and 3.1% were in apprenticeships. They also suggest that "despite the efforts of community, junior, and technical colleges to provide inexpensive, flexible, high-quality training programs, the future of their relationship with industry is unclear . . . the tie between employers and colleges is often too tenuous to sustain the training program" (p. 2). Bragg et al. (1994), in a survey of 400 Tech Prep consortia coordinators around the nation, found that 92.5% stated collaboration between educators and employers as an important focus of their efforts, 67.7% said some form of work-based learning experiences (e.g., youth apprenticeships, cooperative education, school academies) was important, and almost 40% were providing work-based learning. Grubb and Kraskouskas (1992), in research focusing on the integration of academic and vocational education, found a slow proliferation of various types of integration (e.g., a general education requirement for occupational students, and development of academic courses in occupational areas like technical writing or business math).

In fact, relatively little is known about the nature and extent of college and labor market linkages which occur through vocational programs. In all likelihood they differ greatly by college and by type of program. Understanding linkages to the labor market is important in understanding the implementation and success of vocational education reforms and for the future design of policies to improve the labor market preparation of students.

Given the broad array of connections between faculty and the labor market that are likely to exist, we developed (prior to our site visits but based on a review of the literature) a simple schema for categorizing faculty activity. Most behaviors fall into one of four domains: curriculum and pedagogy, career assistance, institutional service, and professional and community service activities. We organize our discussion on the types and extent of faculty linkages to the labor market around these four domains in the section entitled, "The Nature and Extent of Labor Market Connectivity."

First, instructors may bring aspects of the labor market into their classroom via *pedagogical/curricula activities*. For example, they may integrate academic and vocational learning in class or develop student assignments requiring interaction with or work in the community. Second, students may receive *career assistance* from their instructors, ranging from getting information about needed

skills and available jobs to direct placement with an employer. Third, faculty may undertake various *institutional activities* such as taking the initiative in developing programs, or serving on departmental or program advisory committees which include industry input. Fourth, faculty undertake various *professional/community activities*, including work outside the college (particularly part-timers) and membership in civic or professional organizations. While there is some overlap among these domains, they provide a convenient way of examining the wide diversity of connections between teachers in two-year colleges and their communities.

Why Are Faculty Linked to the Labor Market?

In seeking to explain why faculty are or are not linked to the labor market, it is reasonable to postulate a set of individual and institutional factors that we would expect to influence the behavior of any individual instructor. In an economic framework, for example, we might consider faculty to be rational actors deciding how to allocate their time and effort subject to a set of constraints on their time and activities, including those imposed by their institution. In this kind of simple model, faculty connectivity would be a function of the perceived importance of such linkages to their own and the college's interest, the information they have on the labor market, the opportunities they have to share such information with professional colleagues, and the support for such activities they receive from their college. An alternative socio-psychological framework would similarly stress the importance of individual and institutional characteristics, faculty attitudes, and institutional climate in explaining faculty linkages to the labor market. While we do not conceptually develop any particular model or framework in this paper, both approaches imply that a similar set of factors--individual and institutional characteristics--underlie faculty-labor market linkages.

First, an individual faculty member's status--full-time/part-time, and teaching field--will be important. Many faculty are hired as part-time lecturers and have only temporary, and weak, connections to the institution. Community colleges employ faculty in a wide array of teaching fields and serve a number of different goals, ranging from preparing recent high school graduates for transfer to baccalaureate institutions to assisting recent immigrants in mastering basic English. It makes a difference whether the instructor teaches automotive transmission or American history. Many academic programs seem far removed from the world of work, and some vocational programs may be more employment-specific than others. We would expect faculty to vary in the priorities assigned to their duties, including linking to the labor market.

Second, the extent to which individual faculty are linked will be influenced by the institution within which they operate. For example, in order to integrate labor market concerns into curriculum, faculty need sufficient information on labor market trends and the needs of employers, and information on new pedagogical techniques and curriculum changes demanded by ongoing state and federal reforms. This may depend on the type of labor market in which the college is located, the extent to which administrators provide resources to faculty, and the extent to which faculty cooperate with each other. Faculty require assistance from their institution in terms of time, professional development, and other incentives to engage in high level of effort connecting behaviors. The remainder

of this section discusses these issues, and we return to them in the section entitled, "Explaining Faculty-Labor Market Linkages."

Faculty status as full-time or part-time is expected to influence connectivity. Community colleges typically employ a large number of part-timers who hold secondary jobs outside of teaching. These faculty have a direct link to the labor market. In fact, one of the reasons two-year schools have always utilized a large number of part-timers is that "part-time specialists have `more expert knowledge' than full-time generalists" who "bring an up-to-the-moment perspective to their teaching" (Eells, 1931, quoted in Cohen & Brawer, 1989, p. 75). Gleazer, president of the AACJC from 1958 to 1981, argued that the community college was the institution "capable of serving as a connector by virtue of its students and staff members, who frequently work at other jobs in the community" (quoted in Cohen & Brawer, 1989, p. 257). On the other hand, such faculty have relatively weak ties to their institution. They may not have offices on campus, participate in institutional decisionmaking, and they have fewer formal qualifications than full-timers. Thus, the opportunity to use their labor market linkages to strengthen community college education may be limited. Full-time faculty have stronger institutional ties, but may have limited linkages with other local employers.

An instructor's teaching field will clearly influence the opportunities and incentives to have connections to the labor market. Most occupational programs have formal advisory committees through which faculty interact directly with local business and industry representatives.[9] Similarly, faculty are likely to be concerned about the direct placement of their students into jobs and, consequently, care about the quality of the graduates they send out into the labor market. Within vocational fields, we might also expect differences given that some programs are closely tied to a particular industry (e.g., nursing) while others are more general (e.g., business, technology). Academic faculty, by contrast, are further removed from these considerations. We should expect, therefore, differences in connectivity among faculty by teaching field.

A related point is that the professional and institutional climate within which faculty operate is likely to be important. Professional connectivity among postsecondary instructors would seem critical for dissemination of up-to-date information on changing labor market needs, legislative demands, new teaching techniques and curriculum innovation. The extent to which academic and vocational teachers interact may also be important given continuing integration of curricula, more joint classes and team teaching and the broader conception of vocational education being emphasized by policymakers. Within an institution, there may be limited opportunities for interaction among faculty. Grubb and Kraskouskas (1992), in their study of the integration of academic and vocational curricula called for by recent federal reforms, describe the community college as "an archipelago of independent islands, each serving a different mission but with limited communication among them" (p. 39). They found considerable evidence of pervasive disciplinary specialization and an important status difference between academic and occupational faculty. [10]

A broader point concerns the nature of the community college professoriate. Several authors have noted the lack of collective identity built around a shared responsibility for the curriculum: faculty simply teach courses (Cohen, 1973; Cohen & Brawer, 1977; Palmer,

1994). The idea of labor market connectivity which is assumed to be important by proponents of the development of a school-to-work system is simply one of many calls for increased faculty involvement in important institutional obligations: for example, Atwell, Sullins, and Vaughan (1982) argued that faculty should be more involved in community service programs, and Vaughan (1991) argued that faculty members should produce out-of-class scholarship. While this lack of community of practice among two-year college faculty is not an *explanation* for why faculty do or not build linkages to the labor market--indeed it demands an explanation itself--the issues are certainly related to it. The inability to forge a professional identity and a sense of shared professional obligation outside of the classroom may be reflected in the prevalence or otherwise of faculty-labor market linkages.

Individual faculty need to have the tools to engage in building links to the labor market. This includes not just information, but the skills and resources necessary to undertake such activities. For example, there is a common view that vocational teachers, because they are often drawn directly from industry and many are part-time, have serious deficiencies in their pedagogical preparation; there are continual calls for "better preparation of vocational faculty" (NAVE, 1994, p. 7). Professional development at community colleges is widely regarded as weak. Hoerner, Clowes, Lichtman, and Allkins (1991) found in a national survey that 28% of faculty said professional development was "irrelevant," although they also reported that with a supportive college leadership professional development can advance institutional growth. In general, the opportunities for additional training are limited to traditional methods like campus workshops and conferences, and the incentives which institutions are able to provide faculty given their formal structures are limited to travel, tuition, and sabbatical leave. Grubb and Kraskouskas (1992) found that most innovators in the integration of academic and vocational curricula acted without tangible institutional support.

In order to build linkages, faculty need to be informed about current labor market trends. The degree to which they have such information will depend in part on their own efforts and in part on their college administration, colleagues on the faculty, and the interest of local businesses in working with the college. These, in turn, are likely to be influenced by, for example, the physical location (proximity to viable economic base), historical development and mission of the college, connectivity among faculty, college governance structure, legal and funding environment in which the college operates, and the administration's view as to the importance of such information.

This discussion highlights the importance of several factors that underlie our analyses of our survey and case study data. In particular, it suggests the significance of the instructor's discipline and full-time/part-time status. It also suggests that institutional features such as location, mission, governance structure, and resources will play an important role in explaining why some faculty undertake linking activities and some do not.

DATA

To study faculty linkages to their institutions, local labor markets, and their communities, we pursued both a quantitative and qualitative data collection strategy. First, during fall 1995, we administered a mail survey to a national sample of 3,500 community college faculty to gather data on the characteristics and attitudes of faculty and their linkages to the labor market. The survey included both academic and vocational faculty, full-time and part-time. Second, we conducted case studies of four community colleges across the country. The case studies provide more detail as to the types of links faculty have to the labor market and their communities and the institutional context within which faculty undertake such activities. In this section we explain our data gathering techniques and provide some details on our survey and case study samples.

Survey Methodology

Survey Instrument

Our survey instrument was intended to collect data on faculty backgrounds and labor market links. Drawing on previous surveys by NCES and others, advice from the American Association of Community Colleges (AACC) and other experts, and a pilot test of a draft survey instrument with faculty at two sites in the Los Angeles Community College District, a final survey questionnaire was completed in September 1995. All questions pertained to any individual who had at least some instructional duties during the 1994-1995 academic year. Background items covered instructors' personal characteristics (e.g., age, sex, race, ethnicity), educational background (e.g., years of education, certification and degree status, colleges attended), work experience (e.g., years of labor market experience, type of positions held, current links to employers), and professional status (e.g., salary, full-time/part-time, tenure, subject specialty). Other questions concerned faculty's involvement in various college reform initiatives and use of innovative teaching practices, attitudes toward their job and institution, and the nature and extent of links to their institutions, teaching field, the labor market, and community.

In focusing on links, survey items cover the type and level of effort of the links, and some of the supports (e.g., professional development incentives) and barriers to constructing links. We asked about each of the four domains of linkages--faculty pedagogical/curricula activities, career assistance, professional and community activities, and institutional activities--noted above. The complete survey instrument is found in Appendix B.

Survey Sample

To obtain the survey sample, we first obtained mailing lists of community college faculty from slightly over one hundred randomly selected institutions nationwide (again with the assistance of AACC).[11] From these lists, we then randomly selected about thirty-five hundred names. We included academic and vocational instructors, tenure-track and non-tenure track, full-time and part-time, who had instructional duties in 1994-1995. The survey was administered by mail in late October 1995.[12] Data collection continued until April 1, 1996. During this time, we conducted three mailings and also placed follow-up phone calls; these calls indicated that many nonrespondents simply did not receive the survey due to bad addresses or job changes. The overall response rate was about 64% after excluding refusals, those who had changed schools, undeliverable surveys, and ineligible participants. The final sample consists of 1,725 faculty in 92 institutions.[13]

A profile of respondents is shown in Table 1, which contains selected mean characteristics for all respondents, and separately for academic and vocational faculty. Faculty were divided into four groups based on primary teaching field: academic, vocational, developmental, and other. "Academic" included faculty whose primary teaching field is English, mathematics, physical sciences, biological sciences, social sciences, humanities, and foreign languages. "Vocational" included faculty whose primary teaching field is in education-related subjects, social work, agricultural education, business and office education, health occupations, marketing/distributive education, occupational home economics, consumer and homemaker education, communications or computing, and technology education/industrial arts/trade. For ease of exposition we concentrate on academic and vocational instructors throughout this report. When we refer to "all" faculty, we include academic, vocational, developmental, and "other."

The table shows that community college faculty are overwhelmingly white, about half are male, and the average age is over forty-seven. Compared to academic faculty, vocational faculty tend to be older and less likely to be female or from minority backgrounds. Most community college instructors' highest degree is a Master's (or the equivalent), but almost one-quarter of all academic faculty have a doctorate. About one-third of all faculty have tenure, reflecting the fact that a large number of faculty hold instructor status, and about half are part-time.[14] Interestingly, in our sample, a higher proportion of vocational than academic faculty are part-time.

Our survey provides some institution-level data, including benefits of employment, professional development opportunities, and campus climate. Additional institution-level data from other sources were merged into our sample. Information on a college's region and size were obtained from the 1994-1995 *Integrated Postsecondary Education Data System* (IPEDS). This was further supplemented by the *AACC Annual Survey* on the urbanicity of a college and its governance structure (e.g., single-campus, branch campus of a state university, part of a multi-campus district).

Table 1
Means (standard deviations) for Selected Variables, by Faculty Type,
Community College Faculty Survey

	Academic	Vocational	All Faculty
Age	47.6 (9.8)	47.3 (9.0)	47.5 (9.5)
Female	.434	.484	.472
Years teaching in community colleges	12.1 (9.4)	12.1 (8.5)	11.9 (8.9)
Years teaching in current institution	10.7 (9.0)	11.1 (8.3)	10.7 (8.6)
Hispanic	.032	.020	.026
African American	.029	.033	.036
B.A.	.086	.284	.180
M.A.	.688	.565	.624
Ph.D.	.232	.070	.158
Full professor	.156	.150	.149
Associate professor	.089	.095	.094
Assistant professor	.079	.063	.072
Instructor	.277	.337	.307
Adjunct professor	.193	.120	.157
No rank	.136	.156	.141
Urban	.563	.593	.574
Rural	.109	.154	.133
Northeast	.167	.164	.160
North central	.152	.245	.189
West	.319	.253	.304
Single-campus college	.561	.590	.574
Multi-campus district	.233	.176	.201
Total enrollment	10501 (9563)	9408 (8557)	10275 (9380)

Tenured	.338	.346	.335
Faculty represented by union	.567	.569	.574
Part-time	.527	.439	.509
Vocational	---	---	.408
Number of observations	725	703	1725

Note: "Number of observations" refers to maximum number available; means may be based on a smaller sample due to missing observations.

One concern about our sample is whether it is representative of community college faculty nationwide. A point of comparison is the *National Survey of Postsecondary Faculty* (NSOPF), collected by the National Center for Education Statistics (NCES). This survey was conducted in 1987-1988 and again in 1992-1993 and was designed to produce nationally representative estimates of the characteristics of faculty in two- and four-year institutions using weights supplied by NCES to convert sample statistics. Using over eight thousand responses from public two-year college faculty in 1993-1994, we calculated selected faculty characteristics and compared them with our own sample. The results of this exercise are shown in Table 2.

The table shows that our sample is remarkably similar to *NSOPF-93* in terms of faculty gender (53% male in our sample versus 54% in *NSOPF-93*) and race (88% white in our sample versus 87% white in *NSOPF-93*). Our respondents are slightly older, of higher rank, and more likely to have tenure than those in *NSOPF-93*. Overall, however, our final sample is broadly representative of community college faculty nationwide.[15]

Table 2
Means of Selected Variables, Community College Faculty:
Comparison of Surveys

	Our sample	***NSOPF-'93***
Percent male	52.9	54.1
Percent white	88.1	86.8
Percent undergraduates	23.4	27.9
Percent with M.A./professional degree	61.2	61.8

Percent full professor	14.7	10.4
Percent tenured	33.4	24.3
Percent union members	56.0	57.7
Number of observations	1725	8646

Note: *NSOPF-'93* is the National Survey of Postsecondary Faculty, 1993. Figures for *NSOPF-'93* refer to public two-year college faculty only and are weighted (using NCES weights) to be nationally representative.

Case Study Methodology

Our four institutional case studies were designed to supplement the survey results by describing how diverse community colleges connect to local labor markets and what factors inhibit or facilitate such linkages. As in the survey, our primary focus was community college faculty. Unlike the survey, the case studies enable us to explore other types of college-community linkages as well.

Site Selection

The selection of case study sites was limited to the 92 schools that were in the survey sample. Due to time constraints, we could not wait until all survey data was collected to select sites. We therefore conducted a preliminary data analysis when about 75% of the sample was collected to differentiate "high connectivity" and "low connectivity" institutions. To make this determination, we aggregated responses from each school for which we had ten or more responses, and calculated the institutional mean across a sample of survey items for each of the four key domains of connectivity.[16] We then classified institutions according to how far the mean faculty response was above or below the overall mean for that item, and the number of items where a school was above or below the mean.[17] We used various criteria in this exploratory analyses--for example, schools where the mean response was more than one standard deviation above the overall mean response, and so on. Approximately fifteen schools emerged as highly connected, and another seven as weakly connected to local labor markets. (These categorizations were used as a guide; the high/low classification was a statistical artifact not a conceptual one.)

Institutions were selected to provide diversity on the following criteria: *Urbanicity and location*--we sought institutions in urban, suburban, and rural areas and from different regions of the country; *Local economy*--we sought institutions in communities with different types of local labor markets, particularly industrial versus service economies, and those that served thriving and highly diversified economies and those that served more depressed areas or areas dependent on a small number of employers or industries;

Institutional size--we included institutions with large enrollments (over 20,000 students) and small (under 2,500 students); *Institutional mission*--we sought colleges that placed differing emphases on the transfer versus vocational missions. Urbanicity, institutional size, and mission information was available to us from the AACC Survey of Colleges, and information on the local economy was inferred from geographic location.

Following this preliminary analysis, we invited five institutions to participate as case study sites. Four accepted, and contact was never established with the fifth due to a change in leadership.

Characteristics of Sites

We studied four institutions in three regions of the country: southern California, a midwestern city, and the rural south. Table 3 displays the characteristics of each site.

Table 3
Overview of Case Study Site Characteristics

	Site 1	Site 2	Site 3	Site 4
Location	S. California	S. California	Midwest	South
Urbanicity	Suburban	Urban	Urban	Rural
Economy	Service; small business; healthy economy	Mixed; depressed economy	Industrial; healthy economy	Tourism; some industry; depressed economy
For credit college enrollment	21,200	7,500	Over 50,000	2,400
Type of college	Comprehensive	Comprehensive	Technical	Comprehensive

Case Study Procedures

Two researchers spent two days at each institution, talking with twelve to thirty different individuals--presidents, administrators, and faculty. Table 4 provides an overview of the respondents.

Table 4

Site Visit Respondents

	Site 1	Site 2	Site 3	Site 4
President		1	1	1
Vice President	1	1	1	1
Department Heads	4	7**	8*	7*
Faculty	4	1	10**	1
Student Services	1	2	1	1
Community Relations, Community Services	1 (community education and development)	0	2 (community relations; economic development)	3 (continuing education, business-industry services, community services)
Institutional Research	1	1	1	1
Other	1 (dean, instructional services)	3 (special programs; special assistant dean, academy affairs)	2 (union)	2 (dean and assistant dean, instruction)
Total	13	16	26	17

*Focus group
**Some in focus group; some individually

We used semistructured interview guides throughout the case studies, with slight variations in the guides for different functions or departments. All case studies were conducted during spring or fall, 1996. Interviews lasted between one and two hours. We guaranteed confidentiality of both individual participants and institutions, inviting respondents to speak freely about the challenges and opportunities facing their institution related to increasing linkages to local labor markets.

While interviewing was the predominant means of data collection, we also collected relevant documentation from the campuses, including, as available, course catalogs, institutional fact books, and special reports (e.g., report of institutional task forces, campus climate surveys, or strategic plans). Direct observation also supplemented the interviews. During the site visits, we observed several

vocational classes, a departmental curriculum advisory committee meeting, as well as each college's laboratories, classrooms, and other facilities.

In our case studies, we sought to understand the ways institutions and faculty were linked to their local labor markets and communities. Among the issues investigated were (1) the types of linkages the individual respondent and college had established with local labor markets, including any new or especially innovative linkages; (2) the challenges the respondents and college faced in establishing linkages; (3) how the institution encouraged linkages; (4) the perceived importance of linkages; (5) the perceived strength of existing college-community linkages; and (6) future directions for building linkages to local labor markets.

Formal interview protocols asking questions in each of these areas were used, differing slightly by type of person interviewed. An example of an administrator protocol and a faculty protocol are found in Appendix C. We collected any documents the college administrators and faculty were willing to provide. These typically included a fact sheet detailing the college's characteristics, a course catalog, and materials pertaining to community education and contract training such as newsletters and flyers.

THE NATURE AND EXTENT OF LABOR MARKET CONNECTIVITY

In this section we try to paint a picture of the kinds of activities faculty report undertaking and the extent of these connections. We discuss the results of our survey, supplemented with insights from our case studies. The survey provides us with an indication of whether faculty carry out a range of connecting activities and the frequency with which they occur. The case studies give us some concrete examples of faculty linkages to the labor market and their local communities. The purpose here is largely descriptive; analysis of the findings is undertaken in the next section.

Complete survey results from these items are presented initially in Tables 5, 6, and 7, which show the means and standard deviations of various measures of connectivity for different types of faculty. (Appendix Tables 1 and 2 in Appendix A contain frequencies for all faculty.) The table items are grouped according to how they appeared on the survey. We discuss our findings on connectivity according to each of the four domains of linkages identified earlier, but present the survey results in tabular format by question (i.e., mixing domains) because we used different scales for each survey question. Different scales were used because we determined that we would obtain more precise information on some labor market connectivity items; pilot tests of a draft survey led to refinements of

the scales associated with each item.

To aid the reader in interpreting the tables, we indicate for each row of each table the linkage domain that the item is attempting to measure: curriculum and pedagogy (CP), career assistance (CA), professional and community activities (PR), and institutional activities (IN). There are 9 CP items, 8 CA items, 4 IN items, and 2 PR items. Since we expect responses to differ by faculty type, we show means for all faculty and by full-time/part-time status and primary teaching field (academic or vocational). In general, differences between these groups are statistically significant, and the importance of these factors was confirmed by multivariate analyses, as will be discussed further in the next section.

Table 5 shows the responses of faculty to the question, "Approximately how many times did you engage in each of the following activities during the 1994-1995 academic year?" The response scale was "0 times" = 1, "1-5 times" = 2, "6-10 times" = 3, "11-20 times" = 4, and "more than 20 times" = 5. Table 6 reports the responses to a similar question, also on a five-point scale but where "never" = 1, "sometimes" = 3 and "often" = 5.

Table 7 also focuses on labor market connectivity measures. Faculty were asked whether they had engaged in a list of activities and, if they did, whether they had "received institution support." The table reports, for all faculty and by type of faculty, the proportion of faculty doing the activity listed, and the overall proportion receiving support. For example, item a should be interpreted as saying that 49.0% of all faculty "asked an employer about the skills desired in new hires" and 25.4% of all faculty received some help with this activity (the equivalent of 51.9% of those who had engaged in this activity). The "support" responses are discussed in the following chapter.

Table 5
Ratings of Connectivity Measures
(1 = 0 times, 2 = 1-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = more than 20 times),
by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	Full-Time/ Academic	Full-Time/ Vocational	Part-Time/ Academic	Part-Time/ Vocational	All Faculty
a. Provided assistance to students seeking employment (CA)	2.33 (1.07)	3.47 (1.24)	1.79 (1.03)	2.44 (1.17)	2.51 (1.30)
b. Shared information with a colleague on campus about job opportunities for students (CA)	1.94 (0.92)	2.92 (1.20)	1.49 (0.81)	2.07 (1.07)	2.14 (1.16)

c. Received information from a colleague on campus about job opportunities for students (CA)	1.98 (0.97)	2.70 (1.18)	1.49 (0.80)	1.91 (1.03)	2.04 (1.11)
d. Gave a presentation or training workshop to a local business, government, or community organization (PR)	1.35 (0.55)	1.72 (0.83)	1.30 (0.60)	1.56 (0.80)	1.51 (0.77)
e. Provided your class with guest speakers from local business, government, or community organizations (CP)	1.44 (0.73)	1.94 (0.83)	1.26 (0.50)	1.59 (0.74)	1.58 (0.76)
f. Took a group of students to visit local business, government, or community organization work location (CP)	1.26 (0.56)	1.75 (0.90)	1.15 (0.44)	1.42 (0.76)	1.40 (0.72)
g. Personally developed new internship, apprentice, or cooperative education programs (IN)	1.20 (0.51)	1.49 (0.77)	1.13 (0.40)	1.22 (0.50)	1.28 (0.64)

Note: The table shows mean responses to the question, "Approximately how many times did you engage in each of the following activities during the 1994-1995 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities

Table 6
Ratings of Connectivity Measures
(1 = never, 3 = sometimes, 5 = often), by Faculty Type,
Community College Faculty Survey,
Means (standard deviations)

	Full-Time/ Academic	Full-Time/ Vocational	Part-Time/ Academic	Part-Time/ Vocational	All Faculty
a. Talked with students about their work experiences (CA)	3.19 (1.20)	4.24 (0.99)	3.32 (1.22)	3.86 (1.09)	3.65 (1.21)
b. Talked with students about their career concerns (CA)	3.64 (1.14)	4.34 (0.92)	3.45 (1.22)	3.93 (1.09)	3.86 (1.16)

c. Used business/industry examples to illustrate concepts in class (CP)	3.26 (1.35)	4.39 (0.98)	3.29 (1.45)	4.26 (1.08)	3.76 (1.35)
d. Used business/industry case studies for student assignments (CP)	1.98 (1.27)	3.30 (1.46)	2.09 (1.36)	3.00 (1.46)	2.59 (1.51)
e. Developed assignments requiring students to interact with local business, government, or community organizations (CP)	1.95 (1.34)	2.83 (1.42)	1.86 (1.24)	2.22 (1.37)	2.25 (1.41)

Note: The table shows mean responses to the question, "How often did you engage in each of the following activities during the 1994-1995 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities

Table 7
Ratings of Connectivity Measures, by Faculty Type, Community College Faculty Survey, Means

	Full-Time/Academic		Full-Time/Vocational		Part-Time/Academic		Part-Time/Vocational		All Faculty	
	Activity	College Support	Activity	College Support	Activity	College Support	Activity	College Support	Activity	College Support
a. Asked an employer about the skills desired in new hires (CA)	0.33	0.16	0.87	0.55	0.22	0.05	0.56	0.27	0.49	0.25
b. Asked an employer about the quality of your department or college (CA)	0.29	0.14	0.75	0.51	0.19	0.06	0.42	0.24	0.40	0.23
c. Asked an employer about the performance of your department's graduates (CA)	0.27	0.12	0.79	0.53	0.17	0.08	0.46	0.25	0.42	0.24
d. Asked an employer to review and comment on a course	0.13	0.10	0.53	0.38	0.16	0.11	0.29	0.20	0.28	0.19

syllabus (CP)										
e. Asked an employer to review and comment on departmental curriculum (CP)	0.17	0.13	0.66	0.49	0.13	0.09	0.35	0.26	0.33	0.24
f. Asked an employer to donate funds or equipment to your college (IN)	0.17	0.11	0.41	0.26	0.09	0.05	0.19	0.09	0.22	0.13
g. Convinced an employer to donate funds or equipment to your college (IN)	0.13	0.09	0.29	0.18	0.04	0.02	0.16	0.09	0.16	0.01
h. Convinced an employer to provide a training workshop or seminar for faculty (IN)	0.06	0.04	0.15	0.11	0.04	0.03	0.12	0.09	0.10	0.07
i. Co-taught a course with representatives of business, government, or community organizations (CP)	0.06	0.05	0.16	0.10	0.05	0.04	0.18	0.10	0.12	0.07
j. Co-taught a course with a faculty member in another department (CP)	0.17	0.13	0.18	0.15	0.07	0.06	0.12	0.09	0.14	0.11
k. Provided consultation or technical assistance to local employers (PR)	0.17	0.09	0.54	0.28	0.16	0.05	0.39	0.20	0.31	0.15

Note: The table shows the proportion of faculty responding affirmatively to the question, "Did you ever engage in the following activities during the 1994-1995 academic year? If yes, did your institution provide any resources to support you in these activities?" The column labeled "Activity" indicates the proportion of the relevant group responding yes. The column labeled "College Support" shows the proportion of the relevant group (not just those saying "yes" to "Activity") responding that they received institution support.

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities

Curriculum and Pedagogy

Extent of Linkages

The survey reveals several important features of connecting activities related to curriculum and pedagogy. First, the results suggest that connecting activities which require relatively minimal effort on the part of faculty are frequent, whereas those demanding relatively more effort are less frequent. Second, vocational faculty are more connected to the labor market: survey responses across items in Tables 5, 6, and 7 show vocational faculty far more likely to be involved in linking activities than academic faculty. Our results also indicate that business provides significant input into college curricula decisions. Third, full-time faculty are more connected than part time faculty. Part-time vocational faculty are more connected than academic faculty regardless of status, though in no case do part-time vocational staff report higher levels of connectivity than full-time vocational faculty. Fourth, a fairly large number of faculty do not engage in any linking activities; a few faculty are responsible for the bulk of the effort.

In terms of the extent of linkages and the level of effort required to build them, the results in Tables 5 and 6 seem to indicate a relationship. Faculty make widespread use of business applications in their classes to illustrate concepts (Table 6, item c), a fairly easy type of connection to make. The mean for both full- and part-time vocational faculty is over 4 on the 1-5 scale (1 = never; 5 = often). Using business case studies (Table 6, item d) is much less likely to occur, and assignments that require students to interact with local business, government, or community organizations (Table 6, item e) are relatively infrequent (mean = 2.3 for all faculty) presumably because these require a large degree of planning and preparation. Given the amount of work involved, very few faculty appear to have "personally developed new internship, apprenticeship, or cooperative education programs" (Table 5, item g), the modal response being zero times during the academic year for all types of faculty except full-time vocational.

The survey suggests that few faculty provide students with exposure to work settings--few had either taken their students to visit local businesses or provided guest speakers from local business within the past year (Table 5, items e and f). The latter was more common than the former, though in both cases the mean indicates such activities occurred between zero and five times during the course of an entire academic year. Table 7, item i, also suggests only around 15% of vocational faculty and 5% of academic faculty had co-taught a course with business, government, or community representatives. (Item j indicates that fewer than 15% of faculty had co-taught a course with a member of another department in the college over the course of the academic year.)

The results clearly indicate that vocational faculty are more likely to be linked to the labor market than academic faculty. Further evidence is provided from various survey items pertaining to influence of various stakeholders over the curriculum (not reported in tables here), and confirmed informally in our case study visits. This suggests that in academic fields they are of little consequence; in vocational fields they are important. Asked to "describe the impact of various groups on the curricula and programs" of their

institution from weak (= 1) to strong (= 5), including "business and employers" (and "community organizations"), the means for full-time academic and vocational faculty were 2.83 and 3.42 respectively for business/employers (statistically different at the 1% level). (There was little difference between academic and vocational faculty as to the influence of community organizations, with an overall mean of around 2.5.) Overall, on the survey, vocational faculty rated their own influence and that of business higher than did academic faculty, who felt that they, followed by administrators, were the most important players in determining curricula and programs.

Table 7 (items d and e) shows the proportion of faculty who had asked an employer directly to either comment on a syllabus or review a departmental curriculum. As one would expect, these indicate the stark differences between academic and vocational programs at two-year colleges. More than half of full-time vocational faculty had sought such direct employer input during 1994-1995, while only around 15% of full-time academic faculty had. More than two-fifths of full-time vocational faculty had asked (and more than one-quarter had convinced) local employers for funds or equipment for their college (Table 7, items f and g).

On some of the CP survey items reported in Tables 5 and 6, such as use of business case studies and assignments requiring interaction with business, there are statistically significant differences between full- and part-time vocational faculty. The tables are clear in indicating that vocational full-time faculty report being most connected, usually followed by part-time vocational faculty. The fact that full-timers are more connected than part-timers is not surprising. On the one hand, it could be argued that since survey items suggest part-time vocational faculty have lower counts of connecting activities than full-time vocational faculty, they are unequivocally less connected. However, the fact that such faculty work fewer hours at their college and are less attached to that institution, does not necessarily imply that these faculty should not make important connections to the labor market. The result is difficult to interpret since many part-timers hold other jobs which themselves represent a connection to the labor market. Similarly, if one could "adjust" responses for hours worked (which one cannot formally do on anything other than an arbitrary basis), it could be argued that part-time vocational staff are fairly highly connected, since their reported level of connectivity is not much lower than full-timers on some measures. Further, some part-time respondents on our survey may have implicitly normalized their effort in this way; there is no way to be certain this is the case, however.

Finally, the underlying frequencies (Appendix A, Appendix Table 2) reveal that of all faculty, 63% never or almost never developed such assignments during 1994-1995; in contrast, only 21% of all faculty never or almost never used business examples to illustrate concepts during the same period. This suggests that there may be a few faculty who actively build linkages, with most doing almost nothing. This is strongly related to discipline, but our case studies also suggested that there was variation in the degree of effort expended by academic and vocational faculty which was not predictable on the basis of discipline alone.

Types of Linkages

The integration of labor market and community linkages into curriculum and pedagogical practice was shown to be uneven in both our survey results and at all four schools we visited. To a large extent, differences are more a function of departments, disciplines, or programs than institutions. Vocational departments are more strongly connected than academic departments, many of which appear to make no effort to develop labor market linkages. Among the vocational programs, at the high end of the connectivity continuum are those disciplines that require clinical experience, internships, and practica, particularly the health professions (e.g., nursing, respiratory therapy, psychological technicians, physical therapy, emergency medical services) and child care, although many others also include such experiences (e.g., tool and die, welding).

Contributing to this variation across fields of study are state licensing regulations that require students to spend a minimum number of hours in approved work sites. Institutions may add their own requirements, and two of the four schools we visited could point to at least one program where the number of work hours that the institution requires of students exceeds the state licensing regulations. In addition, some training programs in each school we visited offered voluntary apprenticeships, which enable those who participated to gain a higher level of certification (e.g., an apprenticeship in a midwestern welding program was required for eligibility to work on high-rise buildings).

Another means of integrating workplace linkages into curriculum is illustrated by one west coast institution which offers students the opportunity to earn credit toward a vocational degree or certificate through a "work experience education" program that includes independently arranged, on-the-job training opportunities. Participating students are required to identify a faculty supervisor, who is expected to observe the student at the work site at least twice during the semester. Similarly, one school offers an elective "Exploration Course" within their sewing program that included field trips to fifteen local employers.

Our site visits suggested a variety of mechanisms through which curricula were influenced by local employers. In many cases, the linkage was via formal program advisory committees (we discuss these further under institutional activities below). Some faculty suggested that such committees were a formality and simply a way of keeping local representatives abreast of developments at the college, while others stressed their importance as part of an ongoing two-way dialogue aimed at improving the content and rigor of the curriculum. Certainly the more energetic and committed faculty we spoke with appeared to be in almost continual contact with major local employers and with their program's graduates who had successfully gone on to work placements.

It must be noted that all four colleges design courses and curricula closely linked to business needs through their non-credit and continuing education programs. Two of the four schools visited offer on-site training for large local employers, and all four offer courses customized to employer needs on campus. Relatively few full-time faculty, however, teach in these programs. As a result, this form of college-community link has little impact on most faculty even as it becomes an increasingly important component of institutional activities and goals.

Career Assistance

Extent of Linkages

More than any other type of connecting activity, those involving career assistance for students were consistently shown in our surveys to be more prevalent than activities on our other three domains. Career assistance can take a variety of forms, ranging from simply talking with students about their career concerns, to finding out what skills employers are looking for in new hires, to directly placing students into jobs. Our survey and case study evidence suggests a high degree of connectivity among vocational faculty on these dimensions. For example, faculty talk with students regularly about their work and career options (Table 6, items a and b).[18] In terms of acquiring labor market information from employers (Table 5, items a, b, and c), vocational faculty appear to be very active. More than three-quarters of full-time vocational faculty had sought such information. Most encouraging in the context of rapidly changing labor market skills is that 87% of full time vocational instructors had asked an employer about the kinds of skills they needed in new hires (Table 7, item a).

As with CP measures, there are strong differences between academic and vocational and full- and part-time faculty. For example, in sharp contrast, fewer than one-third of academic faculty had undertaken the various types of career assistance noted above. On the one hand, the paucity of such activities among academic faculty might be considered a surprising result in light of the widespread attention given to the low academic standards of new high school students, and the emphasis over the past few years on the integration of academic and vocational curricula. On the other hand, there is evidence that the integration of academic and vocational curricula in community colleges is proceeding slowly, and that the impetus for integration comes from the vocational not the academic side. Further, school-to-work reforms which stress this integration represent only one of many competing "reform" movements in community colleges.

Types of Linkages

Faculty's labor market linkages play a vital role in helping students find jobs in their chosen fields, but our site visits revealed that this assistance is typically informal and ad hoc. Almost all the vocational faculty with whom we spoke at our four institutions periodically receive calls from employers about job openings, which they pass on to students as well as providing informal career counseling to them. Many call employers to recommend their top students. Finally, in our interviews, faculty in programs that include internships, clinical practica, or apprenticeships noted that these training placements lead to job offers for many students.

On each campus we visited, job placement is a major criterion for evaluating program and institutional success. Thus, faculty in vocational areas have strong motivation to obtain complete information about students' employment outcomes.[19] All four

institutions visited report high placement rates (75% or more of graduates employed in their field of study within one year). Such statistics can be misleading, however, because they typically do not include students who drop out prior to completing their program. They also may not indicate the level at which students are employed. Also, some students are seeking to advance with a current employer rather than seek new employment, and the manner in which schools track these students' career outcomes vary.

The degree to which faculty are involved in career counseling and placement also appeared in our site visits to be related to the characteristics of local labor markets. One of the institutions we visited is located in a fairly depressed economy; another in a rural area with limited employment options; and a third in a region with many employers and a rapidly changing labor market. Faculty in each of these face difficulties providing career assistance to students, although their motivation to do so is high. In the fourth institution, located in a region with a relatively strong and stable economy, faculty are better able to develop enduring ties to local employers, and faculty are more involved in referring students to employers and vice versa.

Institutional Service

Extent of Linkages

Another way in which community college faculty--especially vocational faculty--build community connections is through administrative activities. Of these, the most important and widespread is advisory committees for vocational programs. In our survey we asked whether a faculty member's institution or department had a "curriculum development" and "program advisory" committee, whether they served on the committees, and whether it included business or community representatives. Eighty-eight percent of full-time vocational faculty indicated that such a curriculum committee was convened in 1994-1995; the figures for a program advisory committee were 86% for vocational full-time instructors and 68% for full-time academic faculty. In both cases, vocational faculty were more likely to serve on such a committee, which was far more likely to have business or community representation. For example, 33% of full-time vocational faculty report that the curriculum development committee at their school had such representation, and 90% said that the program advisory committee did. This contrasts to 18% and 64%, respectively, of full-time academic instructors.

Types of Linkages

Our case studies confirm the pervasive nature of advisory committees. All four schools visited expect each vocational degree or certificate program to convene an advisory committee. In three of the four schools, annual or bi-annual committee meetings are required by the state as a condition of funding for vocational programs. Additionally, in these same three schools, committee approval is required before the state will approve curricular changes to vocational programs. The voting members of the advisory

committees include practitioners from community workplaces; *ex officio* members include deans, program coordinators or department chairs, and other faculty.

Across all four sites, advisory committees were the most frequent "top of mind" response to questions concerning how faculty built and maintained connections with local labor markets. These committees are the best evidence of policymakers' and institutions' intentions to foster college-community linkages. They are also one of the few institutionalized and required--as opposed to ad hoc and voluntary--mechanisms for linking at the faculty level. Although institutions rely upon advisory committees as the cornerstone of their efforts to maintain responsiveness to local labor markets, respondents at all four sites acknowledged that the quality of the committees varies widely. At best, these advisory committees allow for true college-community engagement and provide opportunities for advisors to serve as "critical friends" to the college and stimulate program improvements. At worst, they are devoid of true content and serve as window dressing to satisfy state policymakers or institutional leaders.

An advisory committee meeting we observed at one college points to some of the problems advisory committees may encounter. The meeting, held on behalf of the Medical Laboratory Technology program, was scheduled for 1.75 hours. Attending were about six institutional administrators and faculty and six community members, representing five different health care organizations. Two of the community members were college alumni. The agenda covered such items as the program budget, admissions and enrollment data, a report on clinical affiliations and placements, development of a new phlebotomy diploma program, a job market needs analysis, curriculum review and approval, and requests for input on continuing education offerings that the college could provide. That the group was able to complete this ambitious agenda within approximately one hour says something about the level of discussion. Virtually every recommendation or goal mentioned by college administrators went unchallenged, despite the best effort of these administrators to generate discussion. Even allowing for the possible inhibiting effect of the observers, this advisory committee meeting provided little feedback, strategic direction, or information to the college.[20]

In addition to the direct effect of the advisory committees on curricula, the committees are also viewed as a place to recruit part-time faculty since membership is comprised of practitioners who care about educational issues. Often, members who become part-time faculty maintain their seat on the committee as community representatives. While these members may be in a strong position to connect the concerns and needs of college and community, their independence and objectivity is somewhat threatened by their role as employees of the college.

Although advisory committees are by far the most important administrative means of promoting faculty-community linkages, other governance activities also contribute to linking. All four colleges, for example, are involved in private fund-raising, which provides occasional opportunities for some faculty to directly interact with business leaders in their field. A midwestern college, for example, was opening a new health sciences building that had received support from local businesses. One west coast college had received

private funds for an auto body shop, and the other west coast college we visited was building a new theater for its fine arts division and a computer simulation laboratory for its business division with private funds. The southern campus received extensive private support for campus gardens integral to its horticulture program.

Participation in campus governance also provides faculty with exposure to information and data about local labor markets. For example, two of the four schools visited had commissioned extensive demographic and economic studies of their service region within the past three years; one-third had conducted a less extensive study; and all four use U.S. Bureau of Labor Statistics and other public data to better understand the local economy. Although these reports are widely available, those faculty who participate in campus governance are most likely to be aware that the information exists and know how to access it.

Professional/Community Activities

Extent of Linkages

Professional and community linkages encompass a wide range of behaviors such as consulting and professional activities and membership and involvement in local community groups. Our survey generally confirmed differences between academic and vocational faculty in the extent of connectivity on professional activities, with few differences in community activities. According to our survey, more than half of full-time vocational faculty had provided consulting services to local employers (Table 7, item k), about 30% of all faculty. However, faculty rarely gave presentations or training workshops to local business, government, or community organizations (Table 5, item d). The mean response for the latter was 1.5 (where 1= 0 times during the academic year 1994-1995 and 2 = 1-5 times), with only small differences among types of faculty.

Our survey also asked faculty whether they were a member of various groups and, if they were, the extent to which they were "personally involved" in them. Table 8 reports the mean responses for all faculty and by faculty type. The first column for each group indicates the proportion who indicated they were members of the group, and the second column shows the overall proportion reporting they were actively involved. Personal involvement was rated on a five-point scale from "none" (= 1) to "a lot" (= 5). All those who answered 4 or 5 are said to have been actively involved.

Although around three-quarters of instructors were members of professional associations (including a majority of part-time faculty), only around one-fifth were members of business or civic groups, and fewer than 10% of all faculty were actively involved. As one might expect, full-time vocational faculty were significantly more likely to be active in local business/industry groups than were academic full-timers. And there were relatively few differences between types of faculty in activities not inherently linked to disciplines: all were about equally likely to be involved with charitable or civic organizations, for example. Vocational faculty are

significantly less likely to be active in politics than academic faculty, but more involved with their local churches and schools.

Table 8
Membership in Community Groups, by Faculty Type, Community College Faculty Survey, Means

	Full-Time/Academic		Full-Time/Vocational		Part-Time/Academic		Part-Time/Vocational		All Faculty	
	Membership	Actively involved	Membership	Actively involved	Membership	Actively involved	Membership	Actively involved	Membership	Actively involved
a. Local business or industry group (e.g., Chamber of Commerce, Business Roundtable)	0.08	0.04	0.20	0.08	0.13	0.04	0.20	0.10	0.16	0.07
b. Professional association in your teaching field	0.86	0.21	0.78	0.25	0.63	0.18	0.59	0.22	0.72	0.23
c. Civic organization (e.g., Rotary Club)	0.17	0.11	0.21	0.12	0.19	0.10	0.21	0.10	0.20	0.11
d. Church or religious organization	0.54	0.27	0.68	0.37	0.63	0.35	0.66	0.35	0.61	0.33
e. Sporting club (e.g., golf club)	0.22	0.10	0.24	0.14	0.20	0.13	0.23	0.14	0.22	0.13
f. Charity organization	0.37	0.13	0.36	0.10	0.34	0.11	0.36	0.14	0.37	0.13
g. Political	0.40	0.08	0.27	0.03	0.41	0.06	0.29	0.03	0.35	0.05

party or campaign										
h. Environmental group	0.27	0.05	0.12	0.03	0.22	0.06	0.09	0.02	0.18	0.04
i. Human services/welfare agency board or committee	0.12	0.07	0.10	0.04	0.11	0.08	0.13	0.07	0.13	0.07
j. School board/PTA	0.13	0.03	0.21	0.07	0.22	0.07	0.21	0.09	0.19	0.07

Note: The table shows the proportion of faculty responding affirmatively to the questions, "Are you currently a member of any of the following groups?" and "What is the extent of your personal involvement?" The column labeled "Membership" indicates the proportion who were members of each group. The column labeled "Actively involved" is the proportion of the relevant group (not just those who were members) who were actively involved (personal involvement = 4 or 5 on a 1-5 scale; 1 = none, 5 = a lot).

Types of Linkages

In our site visits, we discovered many examples of professional and community activities: (1) participation in professional associations; (2) serving as board members for organizations in their fields such as hospitals, medical laboratories, child care facilities, or public safety consortia; (3) participating in accreditation reviews or other evaluations of such organizations; (4) beta testing software; (5) writing books and manuals or preparing training videotapes or cassettes; (6) providing consulting services or "moonlighting" for local employers; and (7) maintaining informal networks in one's field. Many faculty with whom we spoke mentioned their involvement in professional activities as a key means of establishing connections with the community.

Summary

In sum, the most important survey and case study results on the type and extent of linkages to the labor market are as follows:

- Vocational community college faculty tend to be more highly connected to the labor market than academic faculty.

- Part-time faculty generally report fewer connections to the labor market than full-time faculty but may be linked by virtue of their jobs.
- Low level of effort linkages are widespread, while ones requiring significant planning, preparation, or set-up are relatively infrequent.
- Linkages related to career assistance are most prevalent.
- Vocational faculty rely on formal advisory committees and informal links to employers for labor market information and input into curricula.

EXPLAINING FACULTY-LABOR MARKET LINKAGES

Overview of Analysis

How can we explain the types and extent of linkages? Our "Background and Framework" section suggested that a simple economic or socio-psychological model of faculty behavior would predict a set of individual and institutional factors which could be expected to influence the behavior of any individual instructor. This discussion highlighted the likely importance of a faculty member's teaching field and full-time/part-time status, as well as institutional features such as location (e.g., proximity to employers), governance (opportunities to participate in college decisionmaking and interactions between faculty), and resources (time, professional development, and other incentives) which may facilitate or hinder an individual's willingness or ability to undertake linking activities.

In order to assess what factors were most important in explaining linkages, we analyzed our survey and case study data. In this section we report our results in an integrated fashion by discussing a set of key factors which seem to us to explain linking behavior or the absence of it: teaching field; full-time/part-time status; time, resources, and institutional incentives; institutional governance and program boundaries; and local conditions. We discuss each below. Underlying this discussion is a detailed consideration of our interview and other data gained at our four sites, and a comprehensive set of analyses using survey responses.[21] The latter involves two basic components: a formal investigation, using multivariate regression, of the determinants of responses to the connectivity items reported in the previous section; and examination of faculty survey responses to specific questions about the individual and institutional incentives and disincentives to undertake linking activities.

First, we used multiple regression to determine which individual and institutional characteristics had independent effects on the

responses of faculty described in the previous section. In other words, we treated faculty responses on connections to the labor market on each survey item in Tables 5, 6, and 7 as outcome variables.[22] Our explanatory variables included a set of individual characteristics of the faculty member: sex, race/ethnicity, age, years of experience teaching in community colleges and in the current institution, degree level, rank, tenure status, part-time status, and primary teaching field. These individual characteristics would be expected to influence an individual's costs and benefits of undertaking any given connecting activity, and therefore are potentially important factors explaining linkages. Our explanatory institutional characteristics included region, urbanicity, total enrollment, governance structure (multi-campus district, single college district, university branch), and whether the faculty are unionized.[23] Again, these variables would be expected to influence an individual faculty member's costs and benefits of participating in connecting activities through their effect on institutional resources, climate, leadership, and so on.[24] Given the difficulty of interpreting the coefficients and magnitude of the effects of independent variables from these models, we simply discuss the estimated direction of the effects below.[25]

The ability of our set of objective individual and institutional characteristics to explain variation in connectivity ratings varies widely across outcome measure. For example, for all faculty, we can typically explain between 10-20% of the variation, with adjusted R-squareds as high as .22 to .23 for some measures (number of times assisted students seeking a job, asking employers about the quality desired in new hires, asking employers about the performance of graduates) and as low as .02 to .04 for others (co-teaching a course with a business representative, number of times given a presentation to business). These R-squareds are not atypical for cross-section data. Since our goal is not to *predict* the extent of connectivity but simply to highlight which factors seem to be independently associated with greater or less connectivity, this is not a major problem.

Second, we analyzed the faculty survey responses to two additional sets of variables which provide further clues as to variation in connecting activities: perceptions of barriers to building linkages; and perceptions of the institutional climate and support in providing labor market information and promoting linkages. Table 9 reports faculty perceptions of some of the possible barriers to linkages. Survey participants were asked "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?" with the response scale being "strongly agree" = 1 and "strongly disagree" = 5. In addition to using these means, we conducted multivariate analyses of the determinants of respondents' views of these barriers. We regressed our subjective barrier rankings on the same set of individual and institutional characteristics discussed above. These results permit us to determine which factors have statistically independent effects on the ratings.[26] Once again, these results are discussed thematically below, in the context of all our other survey and case study evidence.

Table 9
Ratings of Barriers to Connectivity
(1 = strongly agree, 2 = agree, 3 = neither, 4 = disagree, 5 = strongly disagree),

by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	Full-Time/ Academic	Full-Time/ Vocational	Part-Time/ Academic	Part-Time Vocational	All Faculty
a. I have no time to develop or maintain links	2.73 (1.19)	3.21 (1.26)	2.63 (1.27)	3.18 (1.18)	2.94 (1.25)
b. I don't know how to go about developing links	3.02 (1.19)	3.74 (1.05)	2.91 (1.28)	3.47 (1.08)	3.33 (1.21)
c. Other people in this college have responsibility for developing links	2.34 (1.17)	2.90 (1.22)	2.32 (1.14)	2.59 (1.13)	2.54 (1.19)
d. Employers in our community are not interested in working with our college	4.05 (0.85)	4.22 (0.78)	3.96 (0.85)	4.16 (0.72)	4.09 (0.83)
e. My department discourages me from building links	3.99 (0.94)	4.24 (0.91)	3.84 (1.00)	4.02 (0.94)	4.01 (0.97)
f. My college discourages me from building links	4.05 (0.89)	4.19 (0.96)	3.82 (1.00)	4.07 (0.87)	4.01 (0.96)
g. I don't see much need for stronger links	3.80 (1.05)	4.29 (0.85)	3.83 (0.98)	4.15 (0.81)	4.05 (0.94)
h. Vocational faculty receive more encouragement from my college than academic faculty in building links	2.55 (1.21)	3.26 (1.24)	3.01 (1.07)	3.33 (0.98)	3.04 (1.17)

Note: The table shows mean responses to the question, "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?"

Further clues as to the extent to which opportunities exist for promoting linkages are shown in Table 10. Faculty were asked to what extent various statements described their institution on a five-fold scale: "does not describe my institution" = 1 to "very much describes my institution" = 5. The means by type of faculty are shown in Table 10. (Underlying frequencies are shown in Appendix Table 4 in Appendix A.) These items provide some indication of how faculty view their institution and its policies.

Table 10
Perceptions of Institutional Climate and Incentives
(1 = does not describe my institution, 5 = very much describes my institution),
by Faculty Type, Community College Faculty Survey,
Means (standard deviations)

	Full-Time/ Academic	Full-Time/ Vocational	Part-Time/ Academic	Part-Time Vocational	All Faculty
a. Academic and vocational faculty are housed in separate departments	3.72 (1.53)	3.57 (1.64)	3.46 (1.54)	3.33 (1.60)	3.52 (1.58)
b. Academic and vocational faculty collaborate in the development of curriculum	3.13 (1.28)	2.92 (1.31)	2.80 (1.26)	2.98 (1.26)	2.95 (1.29)
c. Academic and vocational faculty share teaching responsibility for the same courses	2.03 (1.24)	2.04 (1.25)	2.16 (1.24)	2.32 (1.30)	2.12 (1.24)
d. College/department officials supply me with information about the local labor market	2.06 (1.23)	2.48 (1.29)	1.90 (1.15)	2.36 (1.24)	2.19 (1.25)
e. Colleagues in my department supply me with information about the local labor market	1.93 (1.10)	3.10 (1.27)	1.85 (1.10)	2.80 (1.36)	2.41 (1.34)
f. Colleagues in other departments supply me with information about the local labor market	1.93 (1.06)	2.14 (1.13)	1.72 (0.99)	1.88 (1.02)	1.92 (1.08)
g. Links to local business and community are rewarded in promotion/tenure decisions	1.89 (1.16)	1.65 (1.03)	1.76 (1.03)	1.75 (1.00)	1.78 (1.07)
h. Formal policies and rules govern most activities	3.56 (1.19)	3.49 (1.25)	3.47 (1.29)	3.44 (1.12)	3.49 (1.22)
i. Innovative activities are rewarded	3.07 (1.24)	2.71 (1.32)	2.91 (1.33)	2.77 (1.17)	2.87 (1.28)
j. There is a lot of resistance to change	3.07 (1.16)	3.20 (1.23)	2.91 (1.28)	2.92 (1.20)	3.04 (1.23)
k. This institution is highly responsive and adaptive in meeting the needs of the external constituents	3.20 (1.10)	3.11 (1.20)	3.08 (1.27)	3.25 (1.00)	3.16 (1.16)

l. There is a high emphasis on institution-community activities	3.18 (1.10)	3.35 (1.16)	3.11 (1.25)	3.34 (1.09)	3.27 (1.15)

Note: The table shows mean responses to the question, "To what extent do the following statements describe your home institution?"

Teaching Field and Full-Time/Part-Time Status

Two dominant individual- (faculty-) level factors emerge from the multivariate analyses of faculty survey data as important in explaining the connectivity of two-year college faculty to the labor market. First, vocational faculty are statistically more likely to say they are connected on almost all our linkage measures, other things being equal. Second, part-time faculty are far less likely to engage in linking activities, all else held constant.[27] These two characteristics stand in marked contrast to other individual factors which appear to have effects that are far less consistent. For example, there is no clear pattern to the effects of a faculty member's race/ethnicity, sex, rank, or seniority on labor market connectivity, holding other factors constant.

It was clear from our conversations with vocational faculty in our site visits that they have a strong incentive to connect to the labor market--linkages are essential to the very survival of vocational education programs for two reasons. First, linkages bring enrollments. Since many community college students are adults, the workplace is an important setting for recruiting students. Faculty repeatedly pointed out that many of the students in vocational programs are already working and are seeking a certificate or degree as a way to advance their careers. Second, linkages bring job offers for enrolled students. Community college vocational programs are held accountable for placing students in jobs in their fields--failure to achieve target placement rates threatens continued funding and, at minimum, ensures oversight and pressure from administrators. Thus, faculty sought connections to local labor markets to obtain job offers for students.

Faculty in programs with required internships or practica also have a strong motivation to keep work sites satisfied with the students. If the sites pull out of the training program or prefer another school's students, the vocational program's survival is threatened. Thus, when site personnel express dissatisfaction with students, faculty strive to respond through changes to curriculum or pedagogy. There is an inherent incentive to listen to and actively solicit participation from business representatives both through formal departmental/program advisory committees and through informal channels.

The position of part-time faculty was also clear. While they may work in the labor market outside of their college teaching assignment, they have only weak connections to the rest of their college colleagues. They spend fewer hours on campus, are less likely to have an office or a computer linked to other faculty, and are less likely to participate in decisions about curricula. Survey

results clearly suggest that, other things held constant, this leads to less labor market connectivity, at least on the dimensions captured on our instrument. As noted in the section entitled, "The Nature and Extent of Labor Market Connectivity," though, part-time vocational faculty are still relatively highly connected compared to many full- and part-time academic faculty. Our site visit conversations with administrators and particularly vocational faculty suggest that part-timers add to the quality of occupational programs in terms of providing up-to-date skills in the classroom; in interviews they expressed the view that by virtue of their noncollege employment experiences, many part-timers had important linkages to local labor markets. They do, however, have less time available and less incentive to spend that time helping students with career matters and job placement.

These marked differences between academic and vocational (and to a lesser extent full- and part-time) faculty in connectivity are partly, then, attributable to differences in the nature of the faculty member's status. In other words, by the very nature of their field and program, vocational instructors are inherently more likely to be linked to the labor market. But there are other channels through which differences between the two types of faculty may be important: for example, suppose academic faculty were to work more hours and hence have less time for building linkages, or suppose academic faculty received less support from their institutions to undertake such activities. In this case, teaching field is only part of the answer. Hence, we now examine other factors which can help explain the patterns of connectivity observed in our survey data and in our case studies.

Time, Resources, and Institutional Incentives and Support

Time

Building and sustaining linkages to local employers is only one in a long list of faculty responsibilities. Our survey suggests that full-time faculty are working a lot of hours--the mean for academic and vocational faculty is about forty-six hours a week (there is no statistical difference between the two); about 21% of faculty claim they work fifty or more hours per week on average. Most vocational faculty we spoke with at our sites said their workload far exceeded forty hours a week, leaving little time for additional activities. Faculty in vocational departments and divisions repeatedly pointed out that their teaching loads were much heavier than those of faculty in academic departments. For example, faculty in one California community college did not receive any workload credit for teaching laboratories or practica. In addition, many (arguably most) vocational departments have fewer faculty full-time equivalents on average than academic departments, so that each faculty member must assume a greater share of the work of running a department, including curriculum development, participation in campus initiatives, and routine administration. Beyond the real time limits of vocational faculty experience, the perceived discrepancy between academic and vocational faculty teaching loads leaves at least some vocational instructors disinclined to invest extra time on behalf of their college.

Additionally, the distribution of work responsibilities is also a barrier to connecting with local labor markets. Specifically, many

vocational faculty teach in the evening because their students work during the day. This prevents them from attending professional association meetings and other community events that would provide opportunities for building linkages. Similarly, faculty often are unable to attend conferences or workshops, if such events conflict with their teaching schedules.

Beyond heavy workloads, faculty pointed out that building linkages to the labor market competes with other special initiatives. All four colleges we visited participated in some kind of School-to-Work or Tech Prep initiative, but these primarily involved building linkages to local high schools (and, in one case, a nearby polytechnic university), not the labor market. Other special initiatives, including integrating academic and vocational education, VESL programs, and major strategic planning initiatives also require "extra" time from vocational faculty, time that could, under other circumstances, be spent on building labor market linkages.

When asked on our survey if lack of time was a barrier to building linkages (Table 9, item a), faculty were fairly neutral, with academic faculty significantly more likely to agree this was a problem. However, when contrasted with the other seven options given as possible barriers, "I have no time to develop links" was the one which faculty were least likely to disagree with. Thirty-eight percent of all faculty strongly agreed or agreed that they had no time; 39% disagreed or strongly disagreed (Appendix A, Appendix Table 4, item a). Importantly, lack of interest on the part of employers was not considered a barrier by most instructors, with all types of faculty disagreeing with this notion (Table 9, item d). Similarly, faculty themselves disagree with the idea that stronger links are not needed (Table 9, item g). The case studies underscore the fact that building labor market linkages is just one among many responsibilities facing community college faculty. Although faculty and administrators all spoke of the importance of such linkages, the work of building and sustaining them may be a lower priority than other initiatives and goals. Moreover, in our interviews, vocational faculty emphasized that the heavy teaching duties they face, and the differences between their duties and those of academic faculty, are a disincentive for vocational faculty to spend additional time connecting with local labor markets.

Resources

All the community colleges we visited had highly constrained resources. Insufficient funding deters vocational faculty from connecting with local labor markets in several ways. The lion's share of available institutional resources cover salaries and benefits for faculty and staff. Very little is left over for operations and even less is available for professional development. Of the four schools visited, one had no means of reimbursing faculty for any professional development activities. The available pool of professional development funds in another school averaged sixteen dollars per year per faculty member. Administrators here emphasized that, although the school was unable to reimburse faculty for professional development activities, it would grant release time whenever possible and help faculty find substitute teachers so they could miss classes; the faculty, however, reported that the lack of funding for these activities was a major obstacle to participation. A third school had convened a faculty committee to allocate limited faculty development funds; on average, individual faculty members received well under one hundred dollars per year from this committee.

The fourth school provided faculty with six paid "professional development days," by far the largest allocation of resources for this purpose, but still quite limited. In sum, across all four institutions, faculty who want to attend a workshop, conference, or special event in most cases must use their own funds to do so and cannot expect reimbursement for their time or for their direct costs (e.g., gas, meals, or enrollment fees).

All four of our case study schools have programs for faculty to gain workplace experience by spending some time (ranging from two weeks to a semester) working in industry. In all cases, however, funds for such programs are scarce, and only a handful of faculty could participate each year. The functional value of these programs for building linkages is therefore very limited.

One of the colleges also offered students a workplace experience program. Through this program, students could gain course credit for workplace experience, provided they were supervised by faculty who would (among other responsibilities) visit the students at the work site at least twice during the semester. Faculty pointed out, however, that the payment they received for providing this supervision (less than a hundred dollars) had not changed since the 1960s and did not even begin to compensate them for their time. Thus, few faculty were willing to serve as supervisors in this program and those that did often failed to make the required site visits, thereby losing an opportunity to link with a local employer. Moreover, the paltry payment offered symbolized to some the low value placed on such activities by the administration.

Resources also hinder institutions' abilities to respond to the needs of the workplace, especially in technology-intensive fields. Faculty in programs ranging from computing to fire fighting reported that they were largely unable to keep up with the rapid progress of technology. Moreover, colleges would ask local employers for input on program design (e.g., through advisory committees), but would then be unable to respond because they could not afford the needed equipment, leading to disappointment and frustration for both educators and employers.

Institutional Incentives and Support

Despite widespread acknowledgment that labor market and community linkages are vital to the success and well-being of colleges in general, and vocational programs in particular, our survey and site visits reveal that there are remarkably few formal incentives used by institutions to encourage faculty to develop or nurture linkages. This is likely due in part to lack of available resources; it may also be related to college governance (discussed below). Asked if building linkages were rewarded in tenure and promotion decisions (Table 10, item g), the mean response was under 2 (1 = "does not describe my institution," 5 = "very much describes my institution"), regardless of type of faculty. None of the four schools we studied appeared to consider faculty connectivity in promotion and tenure decisions, although at least some respondents in two schools stated that community linkages were considered in initial hiring decisions. Similarly, none of these sites offered rewards or other forms of recognition for faculty that invested special effort in

connecting with local employers or other community organizations. Thus, faculty are not directly rewarded for building linkages to the labor market. The survey also suggests that most faculty do not believe their institutions reward innovative activity (Table 10, item i). Community colleges are marked by formalism (54% of faculty agree or strongly agree with Table 10, item h--"formal policies and rules govern most activities"), although faculty are very divided as to whether there is "a lot of resistance to change," Table 10, item j (about one-third disagree, one-third agree, and one-third think neither).

In Table 7, we reported faculty responses to whether they had undertaken a range of linking activities across the four dimensions we previously identified--for example, if they had "asked an employer about the skills desired in new hires" (career assistance), "asked an employer to review and comment on a course syllabus" (curriculum and pedagogy) or "asked an employer to donate funds or equipment to your college" (institutional activity). We also asked faculty if they "had received college support" for these activities. We did not specify the type of support in the survey instrument, so that respondents' interpretations of this item could range from tacit approval to something more tangible. However, the results are relatively clear: in general, few faculty received any institutional support for connecting activities. The second column for each type of faculty shows the proportion of *all* faculty that say they received support. For example, only around 7% of all faculty (10% of full-time vocational faculty) report receiving college support in efforts to co-teach a course with business or community representatives (item i) or in attempting to convince an employer to offer a training workshop or seminar for faculty. College support was reported strongest for career assistance type measures (items a, b, and c) where more than half of all full-time vocational faculty said they received institution support. For example, almost 55% of all full-time vocational faculty received support for asking employers about new skills (item a), and 53% received support for asking an employer about the performance of their graduates (item c).

In considering the barriers to building links, Table 9 indicates that departments and colleges do not *discourage* linkages: asked if they agreed or disagreed with statements that this was the case, the model response of all faculty was to disagree (mean around 4, with 5 = strongly disagree). Interestingly, there is no statistical difference between academic and vocational faculty on these items, although item h suggests some tension: academic faculty tend to agree that vocational faculty receive more support than they do, while vocational instructors disagree that this is the case.

Institutional Governance and Program Boundaries

Institutional Governance

Both survey and case study results suggest that institutional governance structures may inadvertently hinder faculty from building strong connections with local labor markets. Multivariate analyses of our connectivity measures suggests that faculty in multi-campus districts are less likely to be connected relative to other types of campuses, holding our set of individual and institutional

characteristics constant. Further, investigation of the determinants of responses to questions about barriers (Table 9) suggests that faculty in colleges in multi-campus districts are more likely to agree that they have no time to develop links (item a) or do not know how to develop links (item b), *ceteris paribus*. In contrast, faculty in single-campus districts are far more likely to disagree (relative to faculty in other governance settings) with the statements that their department or their college discourages them from building links (items e and f). They also tend to disagree more that there is no need for links. Some clues as to why these differences exist were found in our case study institutions.

One institution we visited was part of a multi-campus community college district spanning a broad metropolitan area. Not only did the need to gain district approval for program changes and resource reallocations add another layer of bureaucracy to the decision-making apparatus, but the central district was not always responsive or supportive of the goals, needs, and concerns of this college. The highly politicized nature of governance in this district, and the historically confrontational nature of employee/faculty union--administration relations, as well as competition among the district's colleges for scarce resources--contributed to a generally adverse atmosphere. This was compounded by recent funding cutbacks.

Even those schools that did not have to contend with a district office were sometimes blocked from responding to community needs, however. In particular, all the community colleges we visited noted that considerable time was needed to start up new certificate or degree programs, generally involving justifications to the state and applications for supplemental funding. (Although state approval is not needed for non-credit programs, such programs generally offer shorter and less comprehensive training.) The approval process, while obviously important for accountability and quality control purposes, nonetheless hinders colleges from providing rapid responses to workplace needs. Similarly, colleges experience considerable difficulty in shutting down programs that are no longer needed or are not performing well, often due to strong political pressures to maintain such programs. As a result, the institutions are unable to reallocate funds to programs that might be more responsive to the needs of the local labor market.

Respondents in all four schools noted the difficulty of offering degree or certificate programs that did not conform to the academic calendar. Rather than develop short training modules that would enable working people to enter the program at multiple times during the year, most programs offer only one to three "start dates" per year, conforming to the structure of the academic calendar. Similarly, some respondents suggested that training in twelve- to fifteen-week blocks (the length of an average quarter and semester, respectively) does not offer sufficient flexibility. Although two schools we visited were experimenting on a small scale with certificate programs that did not conform to the traditional academic calendar, such changes pose numerous challenges since planning and decisions regarding faculty workload, staffing, funding, assignment of credit, and so forth are all based on the academic calendar.

The advisory committees, described elsewhere in this report, are the primary source of linkages between vocational programs and employers. However, the quality of these committees varies widely. At best, they are a valuable sources of input and commentary on

program quality. At worst, they meet infrequently, have weak community representation, are inadequately informed about the program, and/or rubber stamp department decisions. Unfortunately, institutional administrators may not know whether an advisory committee is functioning as intended. In short, departments can conform to the letter of the law by holding committee meetings as required but may not conform to the spirit of the law by engaging committee members in a critical review of departmental programs and quality.

Finally, vocational faculty in two of the four schools visited felt that they did not fare well under their institution's shared governance structure. In both cases, academic departments, which had more full-time equivalents (FTE) and whose faculty had lighter workloads, dominated the academic senate. In one school where the senate had the responsibility to allocate new faculty FTE to departments, the vocational faculty complained that the senate routinely allocated more FTE to the academic rather than vocational departments, thereby perpetuating the inequities between them. This in turn ensured that vocational faculty would continue to face heavy workloads with little time for other activities, including participation in shared governance and connecting with the community.

Program and Other Boundaries

Our survey and site visits suggest that within colleges, boundaries among programs and teaching fields limit the extent to which faculty collaborate. Differences between academic and vocational faculty have already been highlighted. Our mean survey responses to items on institutional climate and policies, shown in Table 10, reveal that there is departmentalization of faculty, and little collaboration between faculty or in shared teaching (items a, b, and c), with only slight differences among types of faculty. (The underlying frequencies show that 60% of all faculty said that the statement "academic and vocational faculty are housed in separate departments" describes, or very much describes, their institution; fewer than half of the faculty believe there is collaboration between academic and vocational staff in curriculum development.) These results corroborate the findings of other researchers, noted in the "Background and Framework" section, which describe the separation of programs and departments (Grubb & Kraskouskas, 1992).

Further, governance structures and departmentalization likely contribute to the fact that many faculty view building links as the responsibility of other people in the college (Table 9, item c). The mean of 2.3 (5 = strongly disagree) for academic faculty indicates perhaps that they see linking as the responsibility of vocational faculty; the low mean for both academic and vocational staff suggests faculty think administrators have an important role to play at the college level in building connections to the labor market.

Yet information about the labor market does not appear to come from college administrators or colleagues (be they within or outside the respondent's department).

Table 10 (items d, e, and f) implies that building connections to labor markets and communities is primarily an individual

responsibility. Our case studies also revealed that faculty had difficulty obtaining information that could help them build linkages. In addition to descriptive information about local employers, some faculty wanted details that were not easily available. For example, a business computing instructor lamented that she did not know which local employers used the computers on which her students were trained. If she could obtain that information, she could increase the efficiency of her students' job-seeking efforts while also obtaining valuable feedback from the employers about how to best train the students. Similarly, a faculty member in an environmental safety program said that he had little information about the kinds of toxic substances local employers used; if available, such information would enable him to customize training to the local environment.

In addition to differences between departments, our case studies revealed a sharp boundary between for-credit vocational programs that grant certificates and degrees and non-credit programs. Because the latter are often delivered under contracts with local firms, the non-credit organizations within all four community colleges visited had strong linkages to local employers. These divisions are better able to build linkages to local labor markets because they are relatively unencumbered by bureaucracy, can respond very quickly to emerging labor market needs, and develop programs customized to the needs of particular employers. However, all four schools we visited reported that the state provided less reimbursement for non-credit than for-credit courses and course enrollments. Thus, unless demand for non-credit courses is so strong that such courses can be self-supporting, the colleges prefer to offer for-credit rather than non-credit courses. This places limits on the degree to which colleges can take advantage of the rapid response time and flexibility that non-credit courses provide.

Unfortunately, the linkages reflected in the non-credit divisions of community colleges have little to no spillover to the for-credit divisions. The divisions typically have very different reporting lines, so there is little opportunity for information exchange. In addition, faculty rarely teach in the non-credit programs because they have full-time teaching loads in their departments. (Some moonlight in the non-credit area, but this was unusual in the schools we visited.) Moreover, although in theory the non-credit courses can serve as gatekeepers to for-credit programs, there is little concerted effort to market for-credit programs in this way, and the impression of most vocational faculty is that they do not attract students from non-credit programs.

Organizational boundaries also hinder faculty from seeking support from local employers. Three of the four schools visited had development offices, which are responsible for fund raising. Faculty are discouraged from independent initiatives in this area, since such efforts might conflict with those of the larger institution. As a result, faculty did not feel empowered to ask their community contacts to help them meet their needs for equipment or funding.

Local Conditions

Part of the explanation for the extent of faculty-labor market connectivity is due to college location and characteristics of the local

labor market. In our survey analyses we were only able to capture such conditions very crudely--for example, by urbanicity and region--so the importance of location is subsumed into other factors. Further, the survey instrument asked only about one school year, not about changes over time in the college or its environment. However, our case studies suggested the importance of a number of different aspects of locale.

First, respondents pointed out that when the local economy is weak, the colleges have a difficult time building connections with the labor market because employers are not doing much recruiting and therefore have little motivation to interact with the college. In addition, the employers have less money to contract with the college for training programs and courses; they have less time to spare for activities such as advisory committee meetings; and they turn over equipment less often, leaving the college with less opportunity to obtain "hand-me-down" equipment for instructional purposes. Also, there are fewer employers within the college's service area, which *de facto* limits opportunities to build linkages and also increases competition among educators (e.g., private proprietary schools and community colleges) to serve as the "pipeline" to those employers that remain.

Second, community colleges in rural areas or areas dominated by a single industry or employer have fewer opportunities to build linkages. Although in most cases faculty focus their efforts to connect with community on the local service area, in some locations students may need to search for work well beyond the service area.

Third, linkages are difficult to forge and sustain in regions with a rapidly shifting, unstable, or highly diversified labor market. For example, one of the four colleges we visited is located in an area dominated by small businesses, many of which have short life spans. Faculty here stated that they were unable to keep up-to-date on local employers in their fields of specialization without investing considerable time and resources. Even in schools that are located in more stable regions, certain fields such as photography, child care, or tool and die tend to be dominated by small employers that may come in and out of business in relatively brief periods of time. Although collectively, such employers may represent a substantial job market, the task of building lasting and useful linkages is daunting, since any single business may not hire often and may fold, merge, change locations, and so forth within the space of a few years.

Fourth, linkages between vocational faculty and local labor markets are affected by the community image of the college. One of the colleges we visited was perceived (erroneously) as largely a transfer-oriented institution; another was described as "the best kept secret" in its community. Lack of community awareness or distortions in the image of the institution posed obstacles to faculty efforts to build connections.

Summary

Our examination of survey and case study evidence suggests the following are important factors in explaining faculty-labor market linkages:

- Vocational faculty are more connected to the labor market, other things being equal, largely because their programs depend on enrollments and placements for survival.
- Part-time faculty have weak connections to their institutions and, other things being equal, lower levels of connectivity to the labor market.
- Faculty perceive that they have very little time available for undertaking intensive linking activities.
- Limited institutional resources limit professional development and workplace placement opportunities for faculty.
- Institutions do not formally reward linking behaviors and faculty receive little support from their colleges, with the exception of vocational faculty in career assistance activities.
- Faculty in multi-campus districts have lower levels of connectivity, other things being equal.
- Strong boundaries exist between academic and vocational departments, and between credit and non-credit programs, in most colleges, limiting collaboration and information sharing.
- Local conditions affect the opportunities for faculty to build linkages.

CONCLUSIONS

An implicit assumption behind the arguments of those advocating school to work reforms has been the importance of strengthening the linkages between educational institutions and the labor market as a way of improving the nation's education and training system. Labor market connectivity has been, and continues to be, a key ingredient in state and federal efforts to reform vocational education. Although this idea seems to make intuitive sense, there has been little attempt to develop a conceptual foundation for it. In this study, we did not attempt to provide any evidence on the effectiveness or otherwise of labor market linkages to community colleges. Rather, our purpose was to examine systematically for the first time whether in fact such linkages were prevalent at the individual faculty level. Focusing on the role of instructors at public two-year colleges, we sought to determine the nature and extent of the different connections that exist between faculty and local business, government, and community organizations. We found that while there are many examples of linking activities, particularly among vocational faculty in community colleges, these are often ad hoc and informal in nature, and that institutions do relatively little to encourage or reward the building of connections through incentives.

Using a national survey of 1,725 community college faculty and additional evidence from four case studies, we reached six main

conclusions:

1. Faculty and administrators agree that community college linkages to local labor markets are beneficial and important. However, although community college faculty are connected with local labor markets in a variety of ways, these linkages are generally ad hoc and informal in nature. Few institutions have developed systematic plans or strategies for developing and maintaining faculty linkages to local labor markets, or for using existing linkages to improve the quality of education.
2. Linkages that are relatively easy to establish and sustain are most common; those that require relatively more effort or time from faculty are less common. Thus, a large percentage of faculty report using business examples in the classroom; far fewer offer students experiential learning opportunities in work environments.
3. Among community college faculty, those who teach in academic disciplines perceive little need for linking with communities and invest little to no time in such activities. Part-time faculty, many of whom have strong community connections, are often unable to use these connections on behalf of the institution, largely as a result of their tenuous connection to the college. Thus, the work of forging connections rests largely with full-time, vocational faculty. Unfortunately, the heavy workload borne by vocational faculty leaves them with little time for supplemental activities of any kind, and the work of linking to local markets is only one of many demands on their time.
4. Institutional connections to community do not automatically or necessarily provide individual faculty with connections and thus have little impact at the classroom level in degree or certificate programs. For example, several of the institutions we studied had strong institutional connections with local communities as manifested in growing contract education programs; but the "lessons learned" in such programs had at most indirect effects on the curriculum and student services provided in for-credit vocational programs.
5. Vocational faculty are motivated to link with local labor markets because such connections are required for their programs to survive, especially to place students in jobs or in required practica and internships. Nonetheless, faculty receive little encouragement from their institutions to build linkages. For example, few institutions reward or recognize faculty efforts to link with local labor markets, provide professional development to help faculty develop skills in linking, or even reimburse faculty for the direct costs they may incur in building contacts with local employers (e.g., attending conferences, travel). Moreover, faculty face many barriers to linking, ranging from a lack of information about local employers to difficulty responding in a timely manner to employers' emerging needs.
6. The community is not a passive recipient of community college efforts to link but rather plays an active role in shaping college-community relations. Linking is easiest when the local labor market is strong and stable. Employers in depressed economic areas have little motivation to link with community colleges because they have little need for new employees. Communities with large numbers of small businesses or an unstable economic base pose challenges to establishing and sustaining meaningful linkages.

Discussion

While these conclusions appear to be robust, their significance and implications for policy are harder to draw precisely because the picture we paint is one of individual, ad hoc, connections. (If we had found strong, consistent linkages there would be less need to be concerned with possible policy changes.) The results are hard to interpret because we do not have any absolute basis for judging what is "connected" and what is not. Hence, while it appears to us that academic and part-time faculty have very few connections, we have no way of knowing whether this is problematic or not.

Before proceeding with policy changes to improve linkages which have uncertain outcomes (and costs associated with them), it is important to establish--both conceptually and empirically--*why* linkages are important. Until there is a firmer basis for making changes to improve connectivity we cannot be sure what it is about these connections that are most important. For example, we do not know whether the direct career assistance many faculty provide for their students is effective in terms of promoting positive outcomes, or whether use of business examples and case studies in the classroom improves student skills when they reach the labor market themselves.

While there is some variation in the extent of faculty connectivity across institutions, and hence by type of labor market served, geographic location, governance structure, and so on, our picture of linkages is primarily one of individual efforts by particular instructors. Although institutions may have many links to the labor market, this may not affect what happens in the classroom. Academic faculty rarely undertake connecting activities, and there are few formal incentives for vocational faculty to link. Rather, the latter are motivated by the need for enrollments and successful student placement for their programs. Advisory committees are the major linking vehicle at the vocational program level, providing updates on workplace skills and opportunities, and providing feedback on graduates and curricula input. However, in our site visits, the quality of these committees appeared uneven.

It follows from this picture that a first step in improving faculty linkages is for institutional leaders to decide if these connections are important to their institution and if so why they are important. Then they need to establish clear goals and develop plans to achieve these goals. That involves clarifying priorities and inevitably making sacrifices in other areas. Their would seem to be a range of possibilities for colleges to help provide incentives for faculty to build links, to remove some of the barriers to establishing connections, to reward and recognize success, and to develop mechanisms to carry institutional links down into departments and classrooms. For example, one difficulty with developing labor market linkages is that full-time faculty have high workloads. With many demands on their time, building connections is simply one of many responsibilities. We found that, in line with much previous research, that faculty tend to operate in isolation from the rest of their institution, and without much sense of professional identity. Overcoming these factors is a major challenge for effecting any kind of change in community colleges, not just in improving links to labor markets or the broader community.

However, a hopeful finding from our survey and case study data, from the standpoint of improving connections between employers and colleges, is that most faculty believe such links are important and that employers in their local labor market do too. There would appear to be ample scope for increasing institutional support for individual faculty in building linkages. We found that colleges do remarkably little: they do not reward connecting behavior in promotion or tenure decisions; they have very limited resources to encourage faculty to build linkages to the labor market through professional development funds or workplace placement/exchange programs; and the funds they do have do not appear to be used very innovatively. If improving linkages between community colleges and their local labor markets and communities is deemed important by policymakers, institutions need to provide more incentives that might promote such activities. Formally rewarding faculty who develop strong employer links, and greatly expanding the number and range of opportunities for faculty to utilize professional development for linking purposes, would likely have an impact. These changes, if accompanied by efforts to free up faculty time (e.g., through release time or reduced teaching loads), may boost faculty-labor market links. In the absence of new funds, these changes in resource allocation can only occur by reducing funds expended in other areas. For this to happen, administrators and faculty must be convinced of the centrality of such links in providing courses with high-level and relevant skills training for students, and of their importance for institutional mission in the new economy.

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APPENDIX A: APPENDIX TABLES 1-4

Appendix Table 1
Ratings of Connectivity Measures
(1 = 0 times, 2 = 1-5 times, 3 = 6-10 times, 4 = 11-20 times, 5 = more than 20 times),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	0	1-5	6-10	11-20	20+	
a. Provided assistance to students seeking employment (CA)	23.4	37.2	17.2	9.2	13.0	2.509 (1.30)
b. Shared information with a colleague on campus about job opportunities for students (CA)	34.0	39.2	12.9	7.0	7.0	2.137 (1.16)
c. Received information from a colleague on campus about job opportunities for students (CA)	36.5	40.5	11.9	5.1	6.0	2.035 (1.11)
d. Gave a presentation or training workshop to a local business, government, or community organization (PR)	60.6	32.0	4.6	1.5	1.3	1.510 (0.77)
e. Provided your class with guest speakers from local business, government, or community organizations (CP)	54.4	37.0	5.5	2.2	0.8	1.578 (0.76)

f. Took a group of students to visit local business, government, or community organization work location (CP)	69.2	25.3	3.4	0.8	1.4	1.399 (0.72)
g. Personally developed new internship, apprentice, or cooperative education programs (IN)	78.2	18.1	2.0	0.8	1.0	1.283 (0.64)

Note: The table shows mean responses to the question, "Approximately how many times did you engage in each of the following activities during the 1994-1995 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities

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Appendix Table 2
Ratings of Connectivity Measures
(1 = never, 3 = sometimes, 5 = often),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					
	Never 1	2	Sometimes 3	4	Often 5	Means (standard deviations)
a. Talked with students about their work experiences (CA)	3.7	14.8	30.6	14.8	36.1	3.649 (1.21)
b. Talked with students about their career concerns (CA)	2.6	11.2	25.6	19.1	41.5	3.856 (1.15)
c. Used business/industry examples to illustrate concepts in class (CP)	8.6	12.0	18.5	17.1	43.8	3.757 (1.35)
d. Used business/industry case studies for student assignments (CP)	36.1	16.5	17.7	11.5	18.2	2.593 (1.51)
e. Developed assignments requiring students to interact with local business, government, or community organizations (CP)	44.6	18.6	16.4	7.8	12.6	2.252 (1.41)

Note: The table shows mean responses to the question, "How often did you engage in each of the following activities during the 1994-1995 academic year?"

CA = Career Assistance; CP = Curriculum and Pedagogy; PR = Professional and Community Activities; IN = Institutional Activities

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Appendix Table 3
Ratings of Barriers to Connectivity
(1 = strongly agree, 2 = agree, 3 = neither, 4 = disagree, 5 = strongly disagree),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	Strongly agree	Agree	Neither	Disagree	Strongly disagree	
a. I have no time to develop or maintain links	16.5	21.5	23.1	28.9	10.0	2.943 (1.25)
b. I don't know how to go about developing links	8.9	18.4	20.5	35.3	16.9	3.329 (1.21)
c. Other people in this college have responsibility for developing links	18.5	40.3	18.2	14.6	8.4	2.542 (1.19)
d. Employers in our community are not interested in working with our college	1.0	2.7	15.9	47.2	33.2	4.089 (0.83)
e. My department discourages me from building links	2.1	3.4	23.5	33.4	37.5	4.007 (0.97)
f. My college discourages me from building links	2.1	3.3	22.8	34.9	36.8	4.010 (0.96)
g. I don't see much need for stronger links	1.6	4.7	18.9	37.5	37.4	4.045 (0.94)
h. Vocational faculty receive more encouragement from my college than academic faculty in building links	9.8	23.2	34.6	17.9	14.5	3.041 (1.17)

Note: The table shows mean responses to the question, "To what extent do you agree or disagree with the following statements about links to local business, government, and community organizations?"

Appendix Table 4
Perceptions of Institutional Climate and Incentives
(1 = does not describe my institution, 5 = very much describes my institution),
All Faculty, Community College Faculty Survey

	Frequencies (percent)					Means (standard deviations)
	1	2	3	4	5	
a. Academic and vocational faculty are housed in separate departments	21.8	6.0	12.0	19.1	41.1	3.516 (1.58)
b. Academic and vocational faculty collaborate in the development of curriculum	18.6	15.8	31.3	20.4	13.9	2.951 (1.29)
c. Academic and vocational faculty share teaching responsibility for the same courses	44.1	21.1	20.0	8.4	6.5	2.121 (1.24)
d. College/department officials supply me with information about the local labor market	41.0	21.6	20.4	10.8	6.2	2.194 (1.25)
e. Colleagues in my department supply me with information about the local labor market	36.5	18.4	20.8	15.9	8.5	2.414 (1.34)
f. Colleagues in other departments supply me with information about the local labor market	47.5	25.1	18.2	6.2	3.0	1.920 (1.08)
g. Links to local business and community are rewarded in promotion/tenure decisions	58.2	16.3	17.6	5.5	2.5	1.778 (1.07)
h. Formal policies and rules govern most activities	9.2	9.6	28.2	28.7	24.3	3.494 (1.22)
i. Innovative activities are rewarded	21.2	15.6	28.1	24.7	10.3	2.872 (1.28)
j. There is a lot of resistance to change	13.6	18.3	33.8	19.1	15.1	3.038 (1.23)
k. This institution is highly responsive and adaptive in meeting the needs of the external constituents	11.4	13.4	35.6	26.6	12.9	3.162 (1.16)
l. There is a high emphasis on institution-community activities	8.6	14.7	33.3	27.9	15.5	3.270 (1.15)

APPENDIX B: COMMUNITY COLLEGE FACULTY AND INSTRUCTOR SURVEY

Appendix B is available only in Adobe Acrobat format.

If you don't have Adobe Acrobat Reader, you can download it from Adobe's website.

APPENDIX C: PROTOCOLS

PROTOCOLS:
PRIMARY GOALS OF THE SITE VISITS

1. How do colleges connect or link with local labor markets? What do the linkages look like? What are examples of different types of linkages, including formal programs, reciprocal consulting, and informal interactions or relations?
2. To what extent do administrators and faculty consider linkages with local labor markets to be (1) important, particularly in relation to other goals and priorities, and (2) part of their responsibilities? Are there internal, community-based, or other (e.g., state or federal policy) pressures to build linkages?
3. What obstacles do community colleges face in building these linkages? We are interested in obstacles that originate in either the college or the community. To what extent (and how) have colleges overcome these obstacles?
4. How if at all does the college encourage faculty to build linkages to local labor markets? What incentives, rewards, or training is provided? What is the apparent effectiveness of these efforts?

Note: By "links" to local labor markets, we mean all the ways that community colleges interact with businesses, nonprofit organizations, government agencies, and other employers in their service area. These include both formal programs such as contract education or student internships and less formal activities such as joint membership on committees, field trips, or reciprocal consulting.

GENERAL INFORMATION TO COLLECT

Obtain a profile of the local labor market(s). What are the major local businesses and industries? Who are the major employers of students or graduates? Is the local economy growing, stable, or declining?

How many students are enrolled here? What is their average age? What are breakdowns by sex, race, and major? What percentage of students transfer? How many join the workforce? What percentage earn an associate's degree or certificate (i.e., complete their degree or program)? Do students come from this area? Do they remain in this area after completing their community college education?

How many faculty are there? Breakdown for tenure track and other. What is average age or length of employment for faculty? How many new faculty were hired each year in the past few years? What is breakdown for academic vs. vocational faculty? What percentage of faculty have Ph.D.s? What is the background of a typical vocational faculty member?

How are faculty involved in governance? How much power and autonomy do they have? How strong/active is the union? What are major concerns of the faculty senate and union?

How separate are academic and vocational faculty? Are they housed in different departments and buildings? When and how do they interact?

What formal programs exist intended to link the college to the local labor market(s)? Are there Tech Prep, school-to-work, contract education, career academies, or other special programs? Collect materials. Do they generate revenue for the college?

ACADEMIC ADMINISTRATORS

Background

1. What is your title?
2. How long have you been in this role?
3. How long have you been at this institution?
4. What departments or divisions report to you?
5. In addition to supervising departments or divisions, what are your other responsibilities? (Probe to determine responsibilities for academic vs. vocational education.)

Goals and Priorities

6. What are your top three goals or priorities for this institution?
7. (If vocational education is not among them) What are your top goals or priorities related specifically to vocational education? How distinct are the academic and vocational missions at this institution?
8. As you know, our primary focus is on linkages between colleges and local labor markets such as businesses, nonprofit, and government employers.
    - Do you have specific goals or strategies related to community linkages?
    - If so, what are they?
    - How important are these goals compared to other goals and priorities?
    - Are the goals written down anywhere? (get a copy)

Community Linkages

9. When we mention "local labor markets" what comes to mind? How do you describe or define the local labor markets? (Probes: types of industries or businesses, specific employers, geographic boundaries)
   Please describe the activities you undertake as an institution to connect with your local business community and labor markets.
10. How would you characterize relations between this school and the local labor market at this time?
11. With what labor market sectors are linkages the strongest? With what labor market sectors are linkages the weakest?
12. Do you believe that this institution needs stronger linkages to local labor markets?
    - If so, why? If not, why not?
    - (If yes) What hinders the institution from developing linkages? What obstacles must be overcome to achieve this?
13. How have community relations changed over the past five years? What accounts for these changes (probe for changes in school, community).
14. Who among administrators has responsibility for building community linkages? What are their roles? To what extent do they work together on this issue?
15. How has this college gone about building linkages to local labor markets? What programs or initiatives are in place? (Probes: Tech Prep, school-to-work, contract education, service-learning, other)
16. How are these programs or initiatives funded? Have you received state or federal monies designed to encourage greater connectivity with local business or labor markets? (Probes: School-to-Work funds, Tech Prep programs). Do any of the programs or initiatives generate revenue? (If so, are they self-supporting?)
17. Do any college departments or units stand out for having especially strong linkages?

- If so, which ones?
- In what way are the linkages strong?
- How did they develop these linkages?
- When did they develop these linkages?
- Why did they develop these linkages?

18. What obstacles do administrators have to overcome in order to build linkages with local labor markets? (Probe for obstacles in the college and in the community.)
19. In what ways do local employers and businesses have input into the college? How often do you interact with them and in what settings? What committees or task forces do they sit on? In your opinion, is this sufficient? If not, what is needed? What obstacles must be overcome to build opportunities for this type of input?
20. Are there external pressures on the institution to strengthen linkages to local labor markets? (Probe for state and federal policy [e.g., Perkins, school-to-work], community, board of trustees, systemwide office?) Are there specific incentives for doing so? Are there penalties for not doing so?

Faculty

21. To what extent do faculty or other instructional personnel have responsibility for building linkages to local labor markets? Are there any requirements, policies, or incentives to encourage faculty to link to local labor markets? For example, are faculty rewarded for activities in the local community? Are the incentives different for academic vs. vocational faculty?
22. How specifically do faculty link with local labor markets? How does this affect their teaching and instructional activities?
23. What criteria are considered when making promotion and tenure decisions for faculty? Are linkages to local labor markets considered, even indirectly? If yes, explain. If no, why not?
24. What hinders faculty from developing linkages to local labor markets?
25. Have you undertaken any activities to encourage individual faculty to make connections with local labor markets? If so, please describe. Are these activities different for academic vs. vocational faculty?

Probes: Provide information
Professional development
Inservice training
Release time
Workshops or conferences
Special projects or assignments

Visits to employer workplaces

26. Do you believe that faculty should be encouraged to develop stronger ties to the labor market? How important is this in relation to other demands on faculty time?
    What does the institution do to encourage interaction between academic and vocational faculty?

FACULTY

Background

1. What is your title? (e.g., assistant, associate, full, instructor)
2. What is your department, and what types of courses do you teach?
3. How long have you been at this institution?
4. In addition to teaching, what are your other responsibilities? (Probe to determine participation in campus governance, student advising, special programs.)

Goals and Priorities

5. As you know, our primary focus is on linkages between colleges and local labor marks such as businesses, nonprofit organizations, and government employers. In your opinion, how important is it for your department to have these linkages? Please explain.

Community Linkages

6. When we mention "local labor markets," what comes to mind? How do you describe or define the local labor markets? (Probes: types of industries or businesses, specific employers, geographic boundaries)
7. How would you characterize relations between your department and the local labor market(s) at this time?
8. With what labor market sectors are linkages the strongest? With what labor market sectors are linkages the weakest?
9. How have community relations changed over the past five years? What accounts for these changes (Probe: changes in school and community)?
10. Who within your department has responsibility for building community linkages? (Probes: Do you? What are their responsibilities?)
11. How has your department gone about building linkages to local labor markets? What programs or initiatives are in place?

(Probes: Tech Prep, school-to-work, contract education, service-learning, other)

12. How are these programs or initiatives funded? Do they generate revenue? Are they self-supporting?
13. Do any college departments or units stand out for having especially strong linkages? If so, which ones? Is that a model for your own department? If not, why not? Is your department planning similar efforts? (If no, why not?)
14. Do you believe that your department or division needs stronger linkages to local labor markets?
    - If so, why? If not, why not?
    - (If yes) What hinders your department or division from developing linkages? What obstacles must be overcome to achieve this?

Faculty

15. What linkages do you personally have with local labor markets?
16. How do you use these linkages in your teaching? (e.g., do you send students into the community or invite community speakers into your classes?)
17. Compared to other faculty in your department, do you have stronger or weaker ties to local labor markets?
18. What obstacles do faculty have to overcome in order to build linkages with local labor markets? (Probe: obstacles in the college and in the community)
19. Are there external pressures or encouragement for you to strengthen linkages to local labor markets? For example, does your department chair or dean encourage faculty to interact with the community?
20. Are there incentives or resources for you to strengthen linkages to local markets? For example, can you obtain release time, professional development, money, or other support to interact with community employers?
21. Are linkages to local labor markets considered, even indirectly, in tenure and promotion decisions? If yes, explain. If no, why not?
22. Do you believe that faculty should be encouraged to develop stronger ties to the labor market? How important is this in relation to other demands on faculty time?

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[1] We use the terms "two-year" college and "community" college interchangeably throughout the paper, recognizing that this includes comprehensive community colleges, junior colleges, and technical schools. The focus is on public institutions.

[2]The emphasis on connectivity between educational institutions and the labor market is not simply a U.S. phenomenon. McFarland and Vickers (1994), in a review of trends in several OECD countries, argue that "in the context of rapid technological, structural and social change, there is an ever greater danger of mismatches between what schools do and what firms need. Because of this, the interest in creating strong and effective links between educators and employers increases when the rate of change is substantial.

Business partnerships can also help smooth youth's transition from school to work" (p. 4) and that "the practical implementation of `votec' reform depends on cooperative links among public and private sector institutions" (p. 5).

[3] Ideally, one would attempt to assess the implicit assumption behind the school-to-work movement: that connections to the labor market are important. We did not attempt this in this study but, rather, proceeded on the basis that regardless of whether it is indeed the case, the assumption has been an important driver of public policy.

[4]Very little (if any) rigorous conceptual research underlies the assumption behind the school-to-work reform movement. It is important to note that close linkages between employers and the community college may lead to short-term, employer-specific curricula which may not be in the best interests of students.

[5]One additional important linkage is that a very large percentage of community college students have jobs. This may provide an important connection between the classroom and workplace, particularly in areas in which the students' jobs are related to their field of study. In this study, we did not attempt to gather any information about students.

[6]Dougherty estimates that business supported the establishment of an average of 68% of the community colleges he studied in California, Illinois, New York and Washington. He also finds that businesspeople provided a major part of the membership of community college committees which were formed prior to the establishment of colleges.

[7]In a study of school-to-work programs, Lynn and Wills (1994) found that where work-based learning programs have been developed there is often a weak link between students' experiences at the workplace and at the school or college.

[8]The NAVE survey (1994) found that the major responsibility for finding jobs for vocational/technical graduates fell on the students themselves, or with individual faculty in the student's specialty area. Stern (1992) notes that while career counseling and job placement offices have become almost universal at two-year colleges, they have not been successful at facilitating students' entry into the labor market.

[9]Cohen and Brawer (1989) have noted that linkages have been increasing partly as two-year college faculty have professionalized: "the liberal arts instructors at a few colleges have organized lay advisory committees to provide links between campus and community. Composed of influential citizens, such groups have functions far beyond advising on the curriculum in particular programs. Like career education advisory councils, these groups help recruit students to the programs, assist in extracurricular presentations, act as guests in the courses, and, most important, support the programs. They provide a new set of peers for instructors to relate to, and they offer the college a community connection" (p. 89). How widespread such committees are, and the extent of their role, is unknown, however.

[10]Little and Threatt (1992) found strong separation of academic and vocational instructors at the high school level.

[11]About 400 randomly selected schools were contacted with a request for a list of all their faculty. We received responses from approximately half. We selected about 100 colleges from the most usable lists.

[12]In some cases, the survey was mailed to the home of the faculty member; in other cases, it was mailed to the school/departmental address.

[13]2,159 surveys were returned: 61.1% of the initial mailing. It was determined that 337 of these were refusals, people who had

changed schools, were no longer teaching, had retired or died, were undeliverable, or were ineligible. We suspect that many of the surveys failed to reach faculty due to incorrect faculty lists and mailing addresses. 1,725 (49%) valid surveys were used from the 3,500 initially mailed.

[14]Our full- versus part-time classification is based on our best estimate of how many hours per week faculty say they work. We arbitrarily define those working more than thirty-five hours per week or more as full-time. Inspection of the data suggest that moving this cutoff (to say, thirty hours per week) does not affect the reported findings in this paper.

[15]It is not possible to compare our sample to *NSOPF-93* on some important dimensions--for example, part-time status--due to differences in survey items. It should be noted, too, that conversations with NCES staff suggest they have considerable difficulties in calculating accurate sample weights for these items.

[16]Note that the very smallest schools, with only a few hundred students, were not included because these schools did not contribute sufficient faculty respondents to enable accurate assessments of their connectivity levels. Since we did not attempt to obtain a representative sample from each institution, our procedure should be viewed as suggestive of connectivity rather than definitive.

[17]Various analyses were conducted: different survey items were examined; academic and vocational instructors' responses were considered separately and together; and alternate ways of measuring "extremes" were used.

[18]Interestingly, there appears to be relatively little information sharing about job opportunities among faculty members themselves (Table 7, items b and c). The mean response to this item suggests that during the course of an academic year, vocational faculty shared or received such information about six to ten times, while academic faculty did so less than five times. This is likely related to the departmentalization of community colleges and consequent separation of staff, consistent with Grubb and Kraskouskas (1992).

[19]To achieve this, in some cases the responsibility for job placement is centralized in institutional career centers. Thus, when employers inform faculty of job opportunities or when faculty help students find jobs, they are expected to convey this information to the career center. In this way, individual faculty members' connections to employers may become institutionalized.

[20]Clearly, this is but one example and may not be representative. An interesting future study would focus on these program advisory committees and explore their operation in different settings.

[21]Recall that our four case study sites were drawn from institutions in our survey sample. In general we found a high degree of congruence between our observations at these colleges and faculty survey responses.

[22]Since in most cases the dependent variable is dichotomous (either 0-1, or a scale of 1-5), ordinary least squares (OLS) is strictly inappropriate. We, therefore, also estimated ordered logit models (in the case of scaled variables) or binary probit models (in the case of 0-1 variables) to confirm our OLS results.

[23]The effects of unionization in community colleges has been explored in further depth with this survey data (see Brewer, Rees, Gray, & Rivera, 1997).

[24]In our survey data analyses, we confined our attention to the set of "objective" individual and institutional variables, although it would be possible in principle to include in such statistical models individual "subjective" predictors such as job satisfaction, or institutional explanatory factors such as campus climate, which could be constructed from other survey items. This approach may

lead to statistical problems, however, and in this paper we do not adopt this strategy Since all items were completed at a point in time, it is far from clear if these measures are used whether they can be treated as exogenous in regression models. If they cannot, OLS regressions will yield biased results, and correcting for possible endogeneity using instrumental variables is problematic given lack of obvious identifying variables.

[25]Given the large number of indicators of connectivity--outcome measures--available to us, and the large number of independent variables used in our models, reproducing complete regression results is impractical. More important, it is not informative since the magnitudes of the estimated coefficients have no meaningful interpretation in this context; the scales of the dependent variables are nonlinear. (Results may be obtained from the authors on request.)

[26]Once again, we do not show the regression results themselves (available from the authors), but report statistically significant or interesting results in the text.

[27]Further separate regressions using just academic or vocational faculty continue to show part-time status as an important independent predictor of connectivity; similarly, separate regressions for full-timers and part-timers continue to illustrate the importance of teaching field.