In addition to describing various sources of labor market data, this chapter examines how community college administrators and faculty use labor market information in the development and evaluation of career and technical education (CTE) degrees and certificate programs.

Using Labor Market Information in Program Development and Evaluation

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The community college environment is complex and dynamic, requiring constant monitoring. To ensure that workforce education, a core component of community colleges’ missions, remains aligned with colleges’ environments, responsive to employers’ needs, suited to students’ interests and abilities, and current in content and technology, it is critical that institutions understand what is happening in the labor market.

These labor market data illustrate the importance and magnitude of workforce education in postsecondary education. In 2004, 81 percent of students in certificate programs and 64 percent of students in associate’s degree programs reported they were majoring in career areas, which translates to approximately 1 million certificate and 4.4 million associate’s degree seekers (Levesque and others, 2008). Data from the 2007–08 National Postsecondary Student Aid Study sets the number of career education students at the sub-baccalaureate level at 67.6 percent of the undergraduate population (Staklis, 2010). While not all sub-baccalaureate programs are in community colleges, most are.

The Pathways to Prosperity Project, in a 2011 report, identified high-quality career education and community colleges as viable and important routes to high-paying jobs. The report also indicated that of the 47 million jobs created in the next ten-year period, approximately 30 percent will require an associate’s degree or some postsecondary education occupational credential (Symonds, Schwartz, and Ferguson, 2011).
Community colleges have been given unprecedented visibility by the Obama administration, most notably through a first-ever community college summit at the White House and a call for community colleges to produce an additional 5 million community college graduates by 2020 (White House, 2010). At the same time, community colleges are experiencing some of their most difficult economic times, with state after state cutting funds. Add to this a volatile and uncertain national economy with persistent high rates of unemployment and underemployment. The challenge for community colleges to develop, implement, and sustain high-quality career education programs that lead to jobs or provide continuing credit or noncredit education to those already employed is formidable, and the importance of data to inform decisions is significant.

**Uses of Data**

Labor market data and information can be used in a variety of ways. Voorhees (2005), building on the work of Kotler and Fox (1995), notes there are three community college market potentials: existing program development, program modification, or new program development.

The existing program development consists of expanding current markets by either geographic expansion or by finding new segments of the market for existing programs. For example, a community college that has a strong market penetration for existing health care programs may expand those programs by providing continuing education opportunities to former graduates and health care employers in its district.

Program modification occurs when an institution modifies an existing program to keep content and pedagogy current. This is often an ongoing process, especially in programs where technology, external licensure or certification requirements, or specialized accreditation criteria keep changing.

New program development involves creating new programs, which may be spin-offs or subsets of existing programs or totally new for the institution. Post–September 11, 2001, many community colleges responded with new programs dealing with terrorism, hazardous materials, and cyber security (American Association of Community Colleges, 2006). More recently, colleges have created programs emphasizing sustainability, alternative energy, and “green” jobs. According to the Partnership for Environmental Technology Education (PETE), there is a network of over 400 colleges offering programs in environmental, health, safety, and energy technology (Partnership for Environmental Technology Education, 2010).

Determining whether to initiate a new program may be more difficult than it appears. Program demand is a function of both the availability of jobs (the employers’ needs) and potential enrollments in the program (the students’ interests). Both must be present for a program to be successful.
Determining whether to launch a new program is also difficult because some career education programs require substantial investments in faculty, equipment, software, or library resources for relatively few students—health career programs are the most obvious examples—and may stretch college resources beyond what the institution is willing to commit. The availability of clinical sites, competitors offering the same or similar programs, academic preparedness of students likely to go into the program (will they need remedial work?), impact on college facilities, need for prerequisite and corequisite courses outside the program discipline, linkages with high school career and technical education courses in the same field, impact on academic and student support personnel to assist students, and requirements for specialized accreditation or professional agency approval are other aspects of a program that must be considered. While some of these extend well beyond the usual purview of the institutional researcher and labor market data per se, I would be remiss not to mention them because they illustrate the complexities of creating new career education programs at a community college.

Labor market data can also be used to assess the viability and quality of existing career programs. For example, training students for positions in industries that are closing their doors is probably not a good use of resources because this diverts resources away from more realistic programs and gives false promises to students who think there will be jobs. Continuing to invest money in small career programs that fail to attract students, sometimes in spite of good labor market prospects for graduates, is another example of misusing resources.

Sources of Data

There are many sources of labor market data, some more germane to individual community colleges than others. In this section I provide brief descriptions of them and how institutional researchers at the college level might use them. Although most data are quantitative, qualitative data can provide important information as well.

Because this chapter focuses on data useful at the local institutional level, I shall not review sample surveys or other data sources that provide only national or statewide pictures. They are valuable to present a broad framework within which to understand local data, but most if not all community colleges concentrate their attention on what is happening locally, within their defined geographic districts or in adjacent areas that constitute realistic labor markets for their students.

U.S. Department of Labor. The U.S. Department of Labor’s Bureau of Labor Statistics Employment Research and Program Development (www.bls.gov/ers/) pulls together data from a variety of public sources to improve the accessibility and utility of the data. The Department of Labor has several key data sources. For example, the Local Area Unemployment...
Statistics (LAUS) program provides monthly estimates of total employment and unemployment for approximately 7,300 areas. In addition, the Current Employment Statistics program, a survey of about 140,000 businesses and government agencies, representing approximately 410,000 individual worksites, provides detailed industry data on employment, hours, and earnings of workers on nonfarm payrolls for states and about 400 metropolitan areas and divisions.

The department also compiles a Quarterly Census of Employment and Wages, using data from quarterly tax reports submitted to State Employment Security Agencies by over 8 million employers subject to state unemployment insurance (UI) laws and from federal agencies subject to the Unemployment Compensation for Federal Employees (UCFE) program. Including nearly 100 percent of all wage and salary civilian employment, reports provide information on employment and wages by industry (but not by occupation). Data are available at state, county, and some smaller geographic entities.

The Department of Labor also houses Occupational Employment Statistics data, which provide the number of jobs and wages in approximately 800 occupations for federal, state, and some smaller geographic entities. In addition, they collect the Occupational Outlook Handbook, data and information, including projected openings, training and education needed, and descriptions of what workers do for more than 800 occupations. The Handbook is useful not just for labor market data but also for information about the nature of each occupation.

The Occupational Information Network (O*NET®) System is a database of occupational requirements and worker attributes that describes occupations in terms of the skills and knowledge required, how the work is performed, and typical work settings. As with the Occupational Outlook Handbook, the O*NET® System gives substantive information about occupations that is useful for educators developing, implementing, and revising career education programs.

The Federal Employment Data Exchange System (FEDES) is a pilot initiative that provides information on federal employment to participating states to help them meet their reporting requirements. Quarterly data exchanges are conducted with three federal agencies: the Office of Personnel Management (OPM); the Department of Defense, Defense Manpower Data Center (DMDC); and the U.S. Postal Service (USPS).

The restricted-access Wage Record Interchange System (WRIS) facilitates the exchange of wage data among participating states for the purpose of assessing and reporting on state and local employment and training program performance, evaluating training provider performance, and for other purposes allowed under the WRIS Data Sharing Agreement. The exchange permits state-designated workforce program performance agencies to secure wage data of individuals who have participated in workforce investment programs in one state, then subsequently secured employment
in another. A proposed WRIS2 protocol provides an approach for state workforce and UI agencies to exchange records on a voluntary, opt-in basis for purposes of determining the employment experience of participants of programs not under the jurisdiction of the U.S. Department of Labor, but which nonetheless represent important sources of entrants into the state labor market.

**U.S. Census Bureau.** The U.S. Census Bureau also provides an array of labor market data.

Longitudinal Employer-Household Dynamics (LEHD) combines federal and state administrative data on employers and employees with core Census Bureau censuses and surveys to facilitate the release of data needed to generate the Local Employment Dynamics.

Local Employment Dynamics (LED) is also a partnership between the federal and state governments. Its signature product is the online Quality Workforce Indicators (QWI), which gives data at the state, county, and some subcounty levels and permits the user to look at eight employment indicators by industry. The indicators include employment, growth in employment, growth in hiring, number of new hires, firm job change, average monthly earnings for all workers, growth in average monthly earnings for all workers, and average monthly earnings for new hires. The dynamic nature of the LED-QWI product permits researchers to examine these labor market data from a variety of perspectives.

**State Data Sources.** The most important state source of labor market data is Unemployment Insurance (UI) records, compiled by each state under federal guidelines. Intended to provide unemployment benefits to eligible workers unemployed through no fault of their own, the federal-state unemployment insurance system requires employers to report quarterly wages for each employee. In some states, community college boards access UI data and match them with student unit records to assess the employment of students and alumni, aggregating data so that individuals are not identified. They may report back aggregate data to each college but, again, individual students are not identified. In some cases institutions have obtained access to UI data and are able to match UI and their own student records to track individual students. These data are most useful to institutions in tracking the employment and persistence in the labor force of students, indirect measures of program quality, and student success.

Data are reported by industry and not by occupation, so that a nurse working in a manufacturing industry will be coded in manufacturing; provide quarterly wages without indicating the number of weeks of work during the quarter; and exclude employees of the federal government, military personnel, and the self-employed. Because data are collected by state agencies, colleges whose students work across state lines or relocate will find less utility in UI wage records unless their state has agreements to share data with neighboring states. Institutional researchers interested in
learning more about accessing their states’ UI wage records should contact the state unemployment insurance office.

**Organizations and Commercial Data Providers.** Labor market data are also available through a number of agencies and commercial providers. For example, California has taken a proactive stance in providing this information to the community college system through the Centers of Excellence. These centers create environmental scans and customized reports for community colleges to assist in program development, pursuing grants, understanding workforce gaps, connecting with business and industry, and accessing workforce data. The environmental scans are meant to focus on areas that have a labor market need to which community colleges can respond (www.coeccc.net/index.asp).

Online commercial job search sites such as CareerBuilder.com and Monster.com provide data on job openings in identified geographic areas and can give researchers clues about the availability of open positions. Intended more for job seekers than institutional researchers, they are examples of resources that are readily available at no cost and that can provide important insights into a local labor market.

Economic Modeling Specialists Inc. (EMSI) is a commercial firm that gathers labor market data from more than 80 sources and can bring the data down to the zip code level. While I am not promoting this or any other specific agency, I do believe institutional researchers should be aware of private as well as public labor market data sources.

**Local Organizations.** The challenge with all data previously described is that although they can paint an overall picture, they have limitations for local institutional researchers. One limitation is that due to confidentiality restrictions, information about individuals and firms is often suppressed. A second is that for colleges whose service area is at the subcounty level or cuts across parts of several counties, available data may not “fit” the college’s geographic service boundaries. A third is that all quantitative data lags in time; that is, they may be published as much as 9 to 12 months after being collected. In times of stable employment the time gap is tolerable, but in today’s economic climate, data more than a few months old might well present an inaccurate picture of the current labor market situation. Thus, additional market information must be ascertained at the local level.

Business and industry advisory groups, economic development councils, chambers of commerce, and regional workforce boards are local resources for data necessary to make informed decisions. The local community college workforce administrator or career dean is likely to be engaged already with these councils and groups. These professionals can provide valuable information about what is happening locally in industries; they have the insiders’ view as to what is developing and which industries are being targeted for future growth. Active economic development councils are key in this endeavor because their role is to facilitate the
relocation into and expansion of companies in the region. Since having a trained workforce is often an incentive to attract or retain businesses, the connection between the community college and local businesses is critical for the regional economy.

Institutional Research Projects. Institutional researchers, working collaboratively with career and technical education and workforce development colleagues at the college, often implement local research projects designed to obtain local labor market data and information.

Surveys. Surveys are one of the most common forms of gathering local data. A well-designed survey sent to knowledgeable stakeholders who respond can provide important information about the local economy as well as plans and needs of employers. Online surveys, growing in popularity, are easy to construct, easy for respondents to use, cost-effective, and permit immediate compilation of results. However, targeting the “right” respondents who are knowledgeable and willing to share information can be challenging. In addition to surveys of employers and labor force leaders, surveys of career and technical education program alumni and current students can also provide important insights about the local labor market and, perhaps more important, the quality of education and training provided by the college. They may be able to pinpoint knowledge and skills acquired at the college that are especially important on the job, as well as knowledge and skills they wish they had learned.

Focus Groups. Focus groups can be an effective means of gathering local data regarding the labor market and employer needs, particularly when a greater depth of information is needed. Focus groups may be particularly useful to test whether a proposed curriculum includes the “right” courses and content, to learn ways to market a program to potential students, and to learn employers’ perceptions regarding the value of a certificate or associate’s degree-level curriculum. Focus groups are also useful vehicles for learning what language and terminology to use in describing and marketing programs—language and terminology that is germane to the industry and speaks to employers and employees. Focus groups with potential students such as high school enrollees can also elicit important insights into how to communicate about a program.

Observations. Unobtrusive observations and information mined from clinical or workplace course supervisors are other sources of data that receive little attention or systematic compilation. Sometimes just driving around a community and looking at new construction under way, empty storefronts, For Rent and For Sale signs, and other signs of economic activity provides important insights into what is going on. Asking faculty and supervisors working with students in clinical settings to share their perceptions about necessary job knowledge and skills, strengths and weaknesses of new employees just entering the field, and planned changes at the worksite is another process for gathering important insights. The institutional researcher might consider asking site supervisors to share
their insights, affirming the value of the information and prompting them to think more deeply about the labor market and their own organization’s needs. Likewise, faculty can be asked to do the same.

**Challenges of Labor Market Data for the Institutional Researcher**

I have already noted some challenges in using labor market data at the institutional level. In this section I briefly summarize them, recognizing that some challenges may be more formidable than others for a specific college.

Availability and currency of labor market data for the college’s service area can be a major challenge. Data produced in aggregate and for a larger geographic area than the institution serves are of limited utility for decision making. Add to this the fact that data often lags in time and cannot account for rapid and unpredictable changes in the economy and local labor market.

Second, there is limited access to valid employment information for industry clusters as well as employment information for students and graduates. Knowledge and willingness of employers to share plans for their business and workforce is a key but often missing factor. Whether an employer is planning a workforce reduction or expansion, this information remains privileged, often beyond the point that a college can adequately respond to either need.

Finally, there is limited availability of accurate information about student success in job placement as well as licensing, board, or vendor certification examinations. Employers are reluctant to provide specific feedback about the performance of individual program graduates for fear of litigation or difficulty of identifying the specific supervisor of an alumnus. In addition, professional and industry certification and licensing are handled by numerous agencies and organizations. Institutions must thus make arrangements to gather information on licensure and certification pass rates from each organization or rely on students’ self-reports on their results.

Many of these challenges are the exact issues I experience at my own institution. Data are used on a daily basis, yet attaining the most accurate data continues to be a challenge. A wide variety of sources is used, including the U.S. Department of Labor, U.S. Census Bureau, state labor market data, and state and national Department of Education data, yet each of these sources lacks the details to provide local specificities. This is particularly true at my institution, which serves a three-county district that is demographically and economically diverse. The data for each county must be reviewed individually and then combined. We also rely on information gleaned from involvement with local employers and individualized research projects.
These institutional research efforts are both labor and time intensive. Many community colleges, especially small ones, lack the personnel to adequately gather, analyze, and synthesize data. In the past five years, our institution developed an Office for Institutional Research and Effectiveness, which now serves as the central point for gathering and disseminating most labor market data. The office relies on the collaborative work of various deans, directors, and vice presidents to help analyze and set priorities for data collection. We rely heavily on workforce, career, and technical education departments, which play an active role in gathering, validating, analyzing, and using the data.

In 2011, new demands were placed on community colleges for reporting data on graduation and job attainment of graduates in a host of certificate programs. These Gainful Employment Regulations and issues related to tracking students after leaving an institution are discussed more in Christopher Mullin’s chapter “Understanding the Workforce Outcomes of Education,” in this volume.

Given the challenges and limitations that exist at my own as well as other institutions regarding labor market data, and the importance of good data for wise decision making, I suggest that action be taken in the following areas:

- **Expand accessibility to data.** Federal and state legislation is needed, which authorizes colleges’ access to workforce-related data that they need and are obliged to gather and report. Data must be available at the individual student level with appropriate safeguards for privacy and confidentiality.
- **Link data.** Develop and enhance data systems that provide linkages across federal and state departments, certifying agencies, and educational institutions the outcomes of workforce programs and students.
- **Reduce burden.** The number and complexity of data reports being sought by external agencies, not to mention institutional stakeholders, continues to grow. Institutional researchers and career and technical education administrators are increasingly overwhelmed by federal, state, and local need for data at a time when resources continue to be scarce.

**Conclusion**

Community college administrators have the difficult task of examining labor market information in the development and evaluation of career and technical education (CTE) degree and certificate programs. In the ever-changing environment of community colleges and workforce education, it is critical that institutions understand what is happening in the labor market and how to best use this data.

This chapter has reviewed the various uses of data for program development, program modification, and new program development. It further examines sources of labor market data to inform decision making,
including federal, state, commercial, and local resources. Finally, this chapter discussed the challenges of compiling, analyzing, and using labor market data and suggested several approaches for improvement.

References


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