

Making Use of Labor Market Information:

Where to Find Data for Common Community College Decisions

Kathy Booth, WestEd

John Carrese, Laura Coleman, Evgeniya Lindstrom, Theresa Milan, and Lori Sanchez, Centers of Excellence for Labor Market Research

Nick Kremer, VERATAC

Summer 2015

This guide was underwritten by the California Community Colleges Chancellor's Office Vocational Education Research and Technical Advisory Committee (VERATAC).

It is available online at www.coeccc.net, along with a companion piece that provides more detailed information on 25 sources of labor market information.

Introduction

Community colleges have a long track record of working with employers to design programs that are responsive to regional job markets and emerging skill-sets. For example, colleges use labor market information to determine if there are sufficient job openings to warrant creating new programs and to revise course content to address changing needs. Traditionally, colleges have relied on advisory boards and employer partnerships to provide primary labor market information and used resources provided by state and federal sources to access secondary information.

Recently, the number of data sources for labor market information has grown considerably. Companies like Economic Modeling Specialists International (EMSI) compile information from numerous sources, while others like Burning Glass provide access to aggregated data from internet job postings. The California Community Colleges Chancellor's Office has developed several tools that make it easier to access labor market and student employment information, such as the LaunchBoard and Salary Surfer. Given all these sources of information, it can be difficult to know which are best suited to the questions most often asked by community colleges.

How to use this guide

This guide provides a brief overview of labor market information sources, structured around the types of questions that community colleges commonly ask related to developing new programs, designing curriculum, writing grant applications, conducting program review, and engaging in regional planning. It addresses how to:

- Frame effective questions about labor market conditions (page 3)
- Assess the types of jobs that are aligned with college programs (page 5)
- Find out the number of available jobs and projected demand (page 6)
- Document what jobs are like and what employers are looking for (page 8)
- Understand the projected supply of qualified workers (page 10)
- Evaluate how well programs are preparing students for the workplace (page 12)
- Get support for accessing and using labor market information (page 14)
- Find out more about using labor market information (page 16)

The Most Commonly Used Labor Market Data Sources

Detailed information on each labor market resource described in this document can be found in a companion guide, "Understanding Labor Market Information Resources," including what each tool provides, strengths and limitation, whether it is publicly available or requires a subscription, screenshots, and web links. The guide is available at: www.coeccc.net

Framing effective questions about labor market conditions

Research is only as good as the questions you ask and how you ask them. This is especially true when assessing labor market alignment, which involves complex analyses of both specific skills *and* supply and demand.

Create your research questions by determining how you will use the information

Because so much information is available, it is important to clearly state the questions you are trying to answer. Start with the end in mind by determining how you intend to use the information. Being clear on a decision or action will help you identify which information will speak to your key considerations. For example, colleges may look more closely at programs offered by neighboring colleges when starting a new program, but place a greater emphasis on assessing whether students are learning critical problem-solving skills when engaged in review of an existing program. Then, ensure that you have defined specific research questions, such as “How many trained machining technicians will be needed in the next two years?” It is valuable to include stakeholders in the process of refining research questions, as they will be able to provide insights into the information needed by various parties to inform action.

Select the related industries and occupations

It is important to distinguish between industries and occupations when working with labor market information. *Industries* are a group of establishments that produce similar products or provide similar services. Industries are organized by levels such as sectors, subsectors, and groups. For example, telecommunications is an industry group in the broadcasting and telecommunications subsector of the information sector. The “documenting what jobs are like and what employers are looking for” section below can help identify related industries.

Occupations are designations for a set of activities or tasks that employees are paid to perform such as computer support specialists, network administrators, or telecommunications line installers and repairers. Occupations are broader than *job titles*, which are often specific to an industry. Labor market information from secondary sources is reported in terms of occupations, whereas employers tend to refer to job titles. The “assessing the types of jobs that are aligned with college programs” section below provides pointers on how to determine which occupations are related to your program.

Ensure you have the right codes

Many labor market information data systems align college programs, occupations, and employers through crosswalks of codes. Although these codes may seem administrative in nature, ***if they are assigned incorrectly, data tools will not be able to provide accurate information.***

The Centers of Excellence for Labor Market Research (COE), working closely with the Chancellor's Office and the California Department of Education (CDE), have created a [crosswalk of codes](#).¹ Colleges can use this crosswalk to see how local TOP codes line up with both K-12 codes and occupational codes.

Define the geographic region

Labor markets fit within broad boundaries that rarely align with individual cities, counties, or community college districts. However, different sources of labor market information have defined regional economies in various ways. For example, there are variations between the Chancellor's Office's [Doing What Matters regions](#),² the markets and submarkets identified by the Employment Development Department's [Labor Market Information Division](#) (LMID),³ and the California [Workforce Investment Board](#) local workforce investment areas.⁴ When comparing data across multiple sources, it is important that you account for differences in regional definitions, which can usually be distinguished by looking at counties or zip codes.

Furthermore, you may set different regional boundaries based on your context. If you serve a rural region, you may choose a large geographic area in order to take into account students who relocate to get jobs. For urban areas, you may look at commuting distances to establish a region. Programs that train for common jobs, such as nursing, may benefit from assessing demand on both a county and region level, whereas occupations that involve fewer workers, such as funeral services, may only need a regional or multi-regional analysis.

Decide on the method

There are many labor market information resources available to help answer your research questions, including primary and secondary sources, and qualitative and quantitative information. In most cases, it is helpful to bring together multiple data sources to create a more comprehensive picture of supply, demand, required skills, and student outcomes. In addition, it is often easier to engage practitioners with labor market information when it includes a combination of secondary data, case studies, employer perspectives, and student outcomes.

Know Your Codes

The most common codes used for labor market information include:

Industries: North American Industry Classification System (NAICS)

Occupations: Standard Occupational Classification (SOC)

California community colleges programs: Taxonomy of Program (TOP)

All other college programs: Classification of Instructional Program (CIP)

¹ Crosswalk of K-12, college, and occupational codes:

<http://doingwhatmatters.cccco.edu/LaunchBoard/ProgramCodeCrosswalk.aspx>

² Doing What Matters regions: <http://doingwhatmatters.cccco.edu/ResourceMap.aspx>

³ Employment Development Department regions:

www.labormarketinfo.edd.ca.gov/Regional_Economic_Analysis_Profiles.html

⁴ Workforce Investment Board regions: www.cwib.ca.gov/local_boards_map_overview.htm

Assessing the types of jobs that are aligned with college programs

A number of resources provide information that can help colleges determine which occupations are aligned with their programs. But before examining these resources, it is important to note two key considerations.

Skills and occupations are not the same

Many programs teach an array of skills that can be applied to a variety of jobs. For example, technicians trained to work on oil rigs may have safety management skills that are also applicable in agriculture, while students with technology skills can use this knowledge in many settings beyond technology companies. Often, the list of related occupations for career and technical education programs are defined narrowly, based on the overlap between core competencies taught in the program and those expected on the job. Therefore, students may be eligible for more jobs than those included in occupational listings, particularly for older students who may be combining their coursework with skills they learned in previous jobs.

Jobs often require specific training

While students acquire key skills in community college, a certificate or associate's degree may not be sufficient for employment. When looking at available jobs, it is also important to determine the expected education level. For example, accounting students need a bachelor's degree before they can sit for the Certified Public Accountant credential. Or, employers may only require a high school diploma for medical equipment technicians but prefer someone with additional college training in this field. Community colleges should take this into account when assessing when students are likely to move from training to employment.

Data sources for related occupations

- LaunchBoard
- O*NET
- Industry associations

Finding out the number of available jobs and projected demand

There are several ways to look at job openings and trends. Information may be displayed as current figures, projected figures, and factors that will influence demand. When examining job openings, there are several items to keep in mind.

Take into account the timeframe

You may look at different timeframes depending on your question. For example, when you are modifying existing curriculum to keep current with emerging labor market needs, it is helpful to look at recent trends and two-year projections. When applying for a grant that will allow your college to start new programs or significantly restructure existing offerings, five-year projections may be more appropriate. Some labor market sources, such as Employment Development Department's Labor Market Information Division (LMID), only offer ten-year projections. These can be helpful when looking at a program's sustainability.

Emerging occupations only appear in some labor market data sources

Sometimes employers begin to hire for jobs before they have been added to the Standard Occupational Classification (SOC) system. As a result, traditional sources of labor market information such as Economic Modeling Specialists International (EMSI) or the Employment Development Department's Labor Market Information Division (LMID) cannot provide data on these opportunities. In these cases, Burning Glass, Help Wanted Online, or employer surveys may provide useful information.

Job postings don't always reflect job openings

While tools like Burning Glass and Help Wanted Online can help fill in data gaps, their numbers may not provide an accurate count of job openings. For example, employers may list jobs that they don't intend to fill to recruit a pool of potential candidates for the future, or they may use a single posting to hire several people for a particular job type. Furthermore, jobs calling for "some college" or an associate's degree—as opposed to a bachelor's degree—are under-represented in online postings. Industries such as construction tend to fill openings through apprenticeship programs or other means, rather than using internet-based postings.

Understand the nuance in projected job openings

A big percentage change in projected job openings does not always mean that a large number of jobs will become available. For example, an occupation that grows from 10 to 20 positions will show a 100% increase, whereas an occupation that grows from 100 to 150 positions would only show a 50% increase. In addition, it is important to distinguish between new jobs—which represent growth in the total number of positions—and replacement jobs that are created when people retire. In established occupations with large numbers of workers, replacement jobs are

likely to be significant. If you only look at new jobs, you may not have a full picture of employment opportunities.

Data sources for existing jobs

These data sources help you determine the current employment picture, including how many jobs are already filled or how many are currently open for related occupations in your region.

- Employment Development Department/Labor Market Information Division (EDD/LMID)
- Economic Modeling Specialists International (EMSI)
- Burning Glass/Labor Market Insight
- Help Wanted Online

Data sources for projected job openings

These data sources provide information on expected changes to job openings over time.

- Bureau of Labor Statistics
- Employment Development Department/Labor Market Information Division (EDD/LMID)
- Economic Modeling Specialists International (EMSI)
- Employer surveys

Data sources on factors influencing demand

These data sources provide insight into factors driving changes in job markets such as shifts in demographics, trends that are linked to geographic factors, and the impact of new technologies.

- Deputy Sector Navigators/Sector Navigators
- Economic development corporations and economic development agencies
- Employer surveys
- Workforce Investment Boards (WIB)
- US Census Bureau
- Industry associations
- Environmental Systems Research Institute (ESRI)

Documenting what jobs are like and what employers are looking for

Industry and occupational profiles are useful when creating a framework for how college programs relate to jobs. For example, they can provide an overview of typical employers, job functions, and salaries. This information needs to be balanced by input from employers. Often, employers have more specific requirements that are shaped by regional considerations and product-specific factors. Here are several issues to consider when assessing the profiles of specific industries and occupations.

Program competencies need to line up with occupational needs

To understand the skills dimension of labor market alignment, start by comparing the knowledge, skills, and abilities that college courses teach to the requirements for related occupations. (See the “assessing the types of jobs that are aligned with college programs” section above for more information on determining related occupations.) Your program probably trains students for multiple occupations. For example, welding programs can also prepare students for fabrication positions. In looking at employer expectations, you can also identify which soft skills—such as teamwork, problem solving, and communication—need to be paired with technical skills.

Determine how programs fit into career pathways

Community college programs may provide critical skills that fit into a longer educational pathway. For example, students may need hands-on work experience or an apprenticeship to be competitive for a position. Other students pair community college training with a state license or industry certification in response to employer requirements. Or, as described in the “assessing the types of jobs that are aligned with college programs” section above, students may need to secure additional degrees to be eligible for target occupations. If this is the case, determine how students can fill in that critical next step. If that content can’t be integrated into the program of study, identify ways that students can be made aware of these requirements and how to fulfill them.

Discuss secondary data with employers

Data providers like the Employment Development Department’s Labor Market Information Division (LMID) and Economic Modeling Specialists International (EMSI) can provide rich sets of information to examine projected supply and demand, as well as overall skills required for related occupations. This information also provides a framework for gathering additional information from local employers through advisory committees, focus groups, or interviews. Colleges can solicit input on how occupational knowledge, skills, and abilities could be tailored for your region. When external data sets and employer input don’t align, this can provide a fruitful opportunity to dig deeper with employers to better understand their needs. By taking the time to collect primary information, you will be able to secure additional contextual information that will strengthen your ability to support strong completion and employment outcomes for students. This is particularly true when outreach is coordinated across your region.

Data sources for industry profiles

These data sources offer insight into industries that employ related occupations. For example, professions like human resource managers can be found at many employers, whereas other professions are primarily hired by specific types of employers, like nurses.

- Employment Development Department/Labor Market Information Division (EDD/LMID)
- Economic Modeling Specialists International (EMSI)
- Burning Glass/Labor Market Insight
- Help Wanted Online
- Infogroup's ReferenceUSA
- O*NET

Data sources for occupational profiles

For information on the specific skills, knowledge, and abilities associated with particular occupations, as well as other information such as employee profiles, common tasks, work styles, and values, there are a number of resources.

- O*NET
- Bureau of Labor Statistics
- Industry associations
- Advisory boards
- Employer surveys
- Burning Glass/Labor Market Insight
- Help Wanted Online
- Workforce Investment Boards (WIB)
- Census Bureau
- Economic development corporations (EDCs) and economic development agencies

Data sources for salaries

It is valuable to assess salary information in two ways. First, look at starting salaries (10th percentile earnings) to get a sense of the earnings that students just out of college are likely to make. Then look at median salaries (50th percentile earnings) to better understand the longer-term trajectory for students.

- Employment Development Department/Labor Market Information Division (EDD/LMID)
- Economic Modeling Specialists International (EMSI)

Understanding the projected supply of qualified workers

Information on the supply of potential workers can be assessed on multiple levels, including the number and location of programs in the region, the number of people being trained at neighboring community colleges, and the number of people being trained by private and four-year institutions. When examining this information, there are several important considerations to take into account.

Regional training information is splintered among data sources

Unfortunately, there is no centralized data source that lists all of the programs offered or workers trained for a given occupation within a region. While the Curriculum Inventory, Data Mart, and the LaunchBoard offer information on community college student enrollments and graduation totals, this information must be combined with data from other educational institutions to get a complete picture of supply. Entities like the Integrated Postsecondary Education Data System (IPEDS) can fill in graduation numbers from private institutions and four-year colleges, but regional occupational programs are not included in these data sets. Also, information on adult education offerings—whether they are provided by K-12 institutions or community college noncredit programs—is not as complete as information on for-credit programs. Consult with your college’s research office to confirm which types of noncredit data are being submitted to the Chancellor’s Office and included in statewide tools like LaunchBoard and Data Mart.

Program codes may not be used consistently

As noted in the “framing effective questions about labor market conditions” section above, many sources of labor market information require that you have accurate program codes including Taxonomy of Program (TOP) codes—used by California community colleges—and Classification of Instructional Program (CIP) codes, which are used by all other postsecondary institutions. This is particularly important when comparing information on college programs. If different colleges have selected different TOP codes for the same program content, information on the number of students in these programs will not be provided together in data tools. In addition, since private and four-year colleges use CIP codes instead of TOP codes, you will need to use the code [crosswalk](#) to determine which programs align with community college offerings.⁵

Looking at completion numbers alone won’t give accurate counts of qualified workers

Often, colleges look at graduation numbers to determine the supply of potential workers. However, this understates the number of qualified individuals. For example, community college students often need to petition to receive an award once they meet the requirements and some do not complete this final step. Students may not get a job in their field of study, or they may move out of the region to find work. In addition, several research studies have shown that students who pass community college career and technical education courses frequently go on

⁵ Code crosswalk: <http://doingwhatmatters.cccco.edu/LaunchBoard/ProgramCodeCrosswalk.aspx>

to secure significant wage gains, even if they don't complete a program.⁶ In particular, [skills-builder](#) students—workers who are maintaining and adding to skill-sets required for ongoing employment and career advancement—may take only one or two courses as they transition from one field to another.

Data sources for programs in your region

- Centers of Excellence for Labor Market Research (COE)
- Curriculum Inventory
- Deputy Sector Navigators and Regional Consortia

Data sources for students trained at community colleges

- Data Mart
- LaunchBoard

Data sources for students trained at private and four-year institutions

- Integrated Postsecondary Education Data System (IPEDS)
- Economic Modeling Specialists International (EMSI)

⁶ Additional information on skills-builder research:
<http://doingwhatmatters.cccco.edu/ForCollegeLeadership/SkillsBuilders.aspx>

Evaluating how well programs are preparing students for the workplace

There are a number of ways to examine student outcomes including whether they got jobs, the types of jobs they got, their earnings, and employer perceptions of their preparation levels. Some considerations when reviewing this information are described below.

Most data sources on student employment and earnings are partial

Employment information can be tracked through sources like state unemployment insurance (UI) wage data. UI data is central to many statewide tools such as Perkins reporting, Salary Surfer, and the LaunchBoard. However, this data set is missing information on some people, such as those who are self-employed, take federal government or military jobs, or move to other states. This data source also can't provide information on the types of jobs students got or how many hours they worked, making it difficult to answer questions other than the amount of money students made in a fiscal quarter. Data sources, such as the CTE Outcomes Survey, do a better job of capturing information about the context of students' employment and other relevant details, like whether students are employed in their field of study or whether they obtained a third-party certification. However, surveys reach only a portion of students, so results must be extrapolated from a sample that may be small or not fully representative of the students who were served.

Earnings are generally only reported for students who complete programs

Chancellor's Office resources like Wage Tracker and Salary Surfer only document salaries for students who completed programs. This means that reports on earnings outcomes are missing skills-builder students and students who met requirements but didn't get an award. Currently, the CTE Outcomes Survey is the primary resource that reports earnings outcomes for non-completers. However, the Chancellor's Office is examining ways to include skills-builder outcomes in statewide tools like the LaunchBoard and Data Mart. One difficulty is that information on students' majors is not included in statewide student databases. Although college applications capture intended program of study, students' goals frequently change. Therefore, it is difficult to determine which specific program skills-builders were participating in, particularly if they took courses in more than one Taxonomy of Program (TOP) code.

Earnings data have more meaning when compared to regional living wages

Resources like the [Insight Center for Community Economic Development's Self-Sufficiency Standard](#) can help colleges determine the living wage in their county.⁷ This information can be used to assess the earnings that students are attaining or are likely to attain. For example, colleges can compare the starting and median wages for related occupations (described in "documenting what jobs are like and what employers are looking for" section above) to regional

⁷ Living wage calculator: www.insightccd.org/calculator.html

living wages to determine whether students can make a sufficient living in these jobs. Colleges can also compare the earnings of former students to the regional living wage to determine whether they are helping students attain and maintain a reasonable standard of living. Both of these comparisons are available in the LaunchBoard Program Review tool.

Looking at results for various types of students makes the data more powerful

Many funding sources for career and technical education are targeted toward disadvantaged populations including people who are unemployed, disabled, or low-income. Resources provided by the Chancellor's Office like Data Mart, LaunchBoard, and the Perkins Core Indicator reports allow users to disaggregate results by various factors such as race/ethnicity, age, gender, and status such as special populations or students receiving disabled student programs and services. By looking at results by various types of students, your institution can get a better understanding of whether programs are effectively reaching all students.

Data sources for the number of students who are employed

- LaunchBoard
- Perkins Core Indicator Reports

Data sources for the types of jobs students got

- CTE Outcomes Survey

Data sources for student earnings

- Wage Tracker
- LaunchBoard
- CTE Outcomes Survey
- Perkins Core Indicator Reports

Data sources for student skills and skills deficiencies

- Advisory boards
- Employer surveys
- Workforce Investment Boards (WIBs)

Getting support for accessing and using labor market information

The Chancellor's Office funds several entities that help colleges collect and use labor market information. Their services are described below, all of which are free to community colleges. Visit the Doing What Matters for Jobs and the Economy website to find [technical assistance providers](#) that are specific to your sector and your region.⁸

Centers of Excellence for Labor Market Research

The [Centers of Excellence for Labor Market Research](#) (COE) deliver statewide, regional, and local labor market research customized for community college decision-making and workforce development.⁹ COE work with colleges, regions, and sector networks and can support developing new programs, designing curriculum, writing grant applications, conducting program review, and engaging in regional planning, including:

- Framing effective questions about labor market conditions
- Assessing the types of jobs that are aligned with college programs
- Finding out the number of available jobs and projected demand
- Documenting what jobs are like and what employers are looking for
- Understanding the projected supply of qualified workers
- Evaluating how well programs are preparing students for the workplace

Deputy Sector Navigators/Sector Navigators

Deputy Sector Navigators and Sector Navigators serve as regional and statewide contacts for industry sectors—such as health or advanced manufacturing—and work with colleges and employers to support workforce training and career pathways. For example, they can provide direct connections to employers, track industry trends that have workforce development implications, and provide detailed information on programs at other community colleges. They also support alignment of college programs, foster effective practices, and convene advisory groups.

Deputy Sector Navigators and Sector Navigators can support developing new programs, designing curriculum, writing grant applications, conducting program review, and engaging in regional planning, including:

- Finding out the number of available jobs and projected demand
- Understanding the projected supply of qualified workers

⁸ Doing What Matters website with contact information: <http://doingwhatmatters.cccco.edu/Contact.aspx>

⁹ Centers of Excellence for Labor Market Research website: www.coecc.net

Regional Consortia Chairs

As complements to Deputy Sector Navigators and Sector Navigators, Regional Consortia Chairs convene career and technical education, workforce development, economic development, and contract education programs across all programs of study within an economic region. Deputy Sector Navigators, Sector Navigators, and Regional Consortia Chairs incubate, sustain, and spin off partnerships that serve industry sectors and occupational clusters within a defined domain. They also build collaborative communities of practice that bring faculty and practitioners together around common interests that can be better advanced through collaborative effort.

Regional Consortia Chairs can support developing new programs, designing curriculum, writing grant applications, conducting program review, and engaging in regional planning, including:

- Understanding the projected supply of qualified workers

Institutional Research Offices

Within your college, the institutional research office can be another source of support to gather and interpret labor market information. For example, local researchers can help design employer surveys or other primary data collection efforts. They can also help link labor market information to college information, or provide more detailed analyses by program or student population. Although not all researchers are versed in labor market information, many are building this capacity.

Institutional researchers can support developing new programs, designing curriculum, writing grant applications, conducting program review, and engaging in regional planning, including:

- Documenting what jobs are like and what employers are looking for
- Understanding the projected supply of qualified workers
- Evaluating how well programs are preparing students for the workplace

Want to find out more?

Detailed information on each resource described in this guide can be found in a companion guide, "[Understanding Labor Market Information Resources](#)," available on the Centers of Excellence website.¹⁰ It includes:

- An overview of what each tool provides
- Whether it is publicly available or requires a subscription
- Strengths and limitations
- Screenshots
- Web links

These reports and guides can provide additional insights into working with labor market information.

[Framework for Higher Education Labor Market Alignment: Lessons and Future Directions in the Development of Jobs-Driven Strategies](#)

This 2014 report by Jennifer Cleary and Michelle Van Noy from Rutgers provides a framework for understanding labor market alignment efforts, with an emphasis on the complexity of working with labor market information in the community college context. The paper also assesses what is known based on current research and practice as well as identifies priorities for future research on labor market alignment.

http://www.heldrich.rutgers.edu/sites/default/files/products/uploads/Dimension_of_Labor_Market_Alignment.pdf

[Research Brief: Effective Use of Labor Market Information](#)

Commissioned by the Chancellor's Office Vocational Education Research and Technical Advisory Committee (VERATAC) in 2013 and written by Eva Schiorring of the Research and Planning Group for California Community Colleges (RP Group), this short paper identifies skills and competencies administrators and faculty need to effectively use labor market information and provides a framework that practitioners can use to guide their work in this area.

<http://www.rpgroup.org/projects/effective-use-lmi>

[Using Labor Market Data to Improve Student Success](#)

This 2013 report by the Aspen Institute explains how colleges can use labor market information to tailor their educational programs to current labor market needs and measure students' labor market outcomes. It offers concrete examples and describes six commonly-used data sets.

<http://www.aspeninstitute.org/sites/default/files/content/upload/AspenGuideforUsingLaborMarketData.pdf>

¹⁰ Centers of Excellence for Labor Market Research website: www.coeccc.net