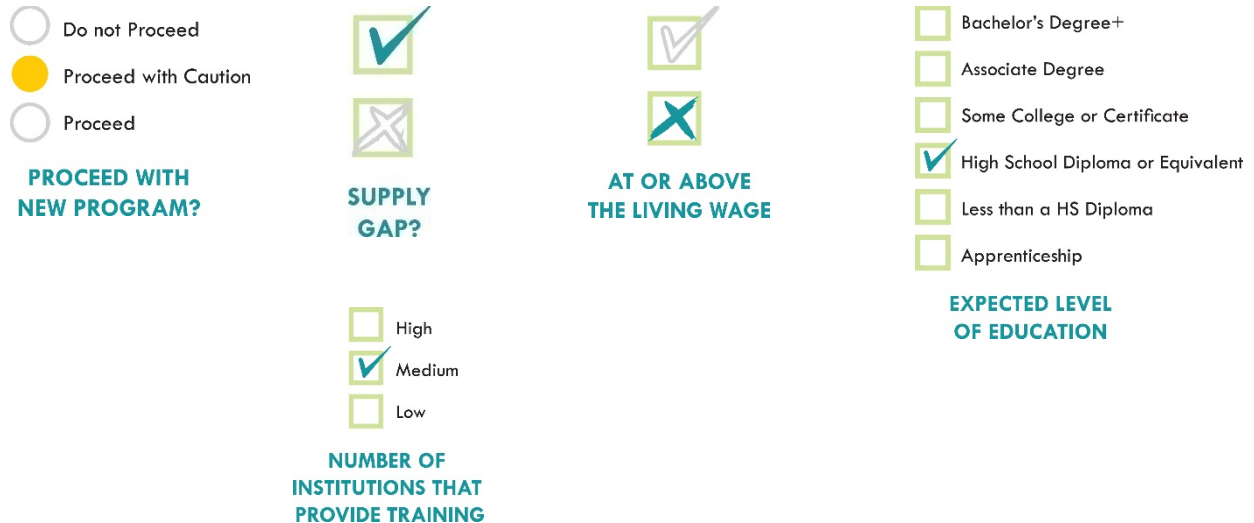


Software Applications

Labor Market Analysis for San Diego Continuing Education

September 2019

Summary



This report provides labor market information for occupation(s) selected by San Diego Continuing Education for its *Software Applications* program. The training provided by this program is likely to lead to employment as *Data Entry Keyers*. According to available labor market information, this occupation has a labor market demand of 217 annual job openings, while average demand for an occupation in San Diego County is 277 annual job openings. Five community colleges supply the region with 18 for-credit awards: Grossmont College, MiraCosta College, San Diego City College, San Diego Miramar College, and Southwestern College. While associate degrees are offered, the colleges supplied primarily certificates, with varying numbers of units. Only San Diego Continuing Education supplies noncredit awards for this occupation, which averaged 27 awards over the past three program years. In short, the region supplies 45 for-credit and noncredit awards for 217 annual job openings, suggesting that there is a labor market supply gap. However, this brief recommends proceeding with caution when developing a new program because both entry-level and median wages are below the living wage. Expected level of education for this occupation is a high school diploma or equivalent.

Introduction

This report provides labor market information (LMI) in San Diego County for occupations related to the six-digit Taxonomy of Programs¹ (TOP) code, Software Applications (TOP 070210). The purpose of this brief is to assist noncredit program providers in the region, such as San Diego Continuing Education (SDCE), with program development and review. SDCE identified one occupation from the Standard Occupational Classification (SOC)² system for *Software Applications*, which will be the focus of this report:

Data Entry Keyers (SOC 43-9021): Operate data entry device, such as a keyboard or photo composing perforator. Duties may include verifying data and preparing materials for printing. Sample reported job titles include:

- Data Entry Clerk
- Data Entry Specialist
- Typist
- Fiscal Assistant
- Data Entry Machine Operator
- Data Entry Operator
- Underwriting Support Specialist
- Records Clerk
- Data Transcriber
- Data Capture Specialist

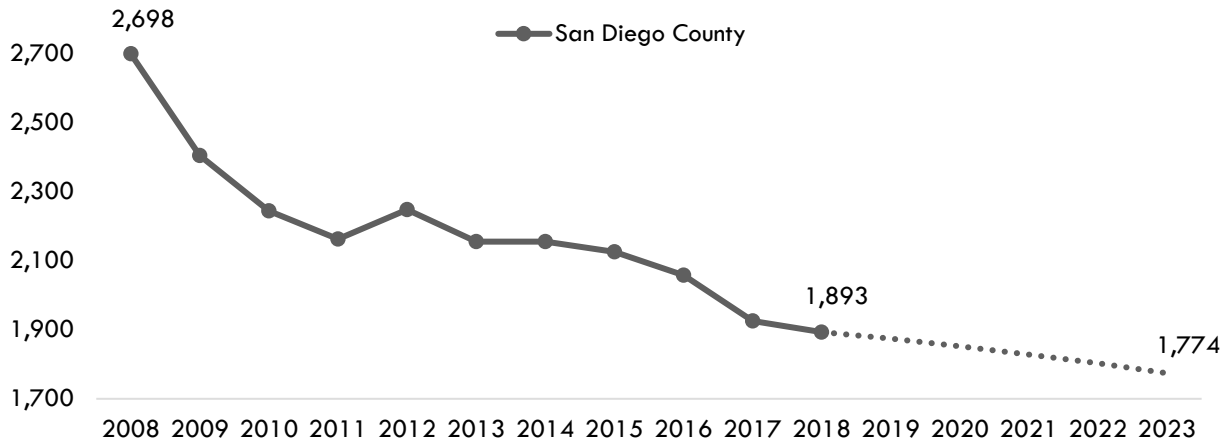
Projected Occupational Demand

Between 2018 and 2023, *Data Entry Keyers* are projected to decrease by 119 net jobs or six percent (Exhibit 1). Employers in San Diego County will need to hire 217 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

¹ Taxonomy of Programs (TOP) is a system of codes used by the California Community Colleges for the purpose of collecting, calculating, or disseminating data about similar training programs.

² The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

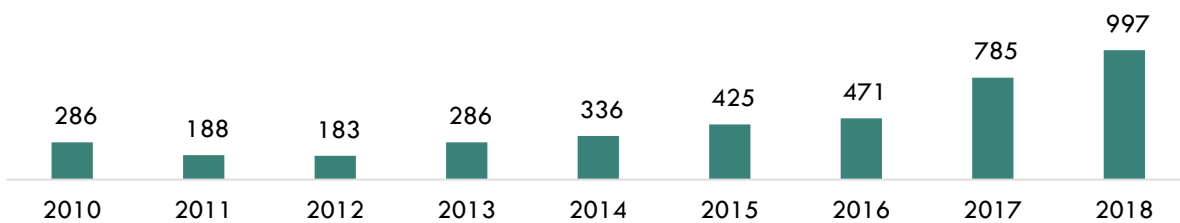
Exhibit 1: Number of Jobs for Data Entry Keyers (2008-2023)³



Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market demand that are not captured by historical data. Between 2010 and 2018, there was an average of 440 online job postings per year for *Data Entry Keyers* in San Diego County (Exhibit 2).

Exhibit 2: Number of Online Job Postings for Data Entry Keyers in San Diego County (2010-2018)⁴



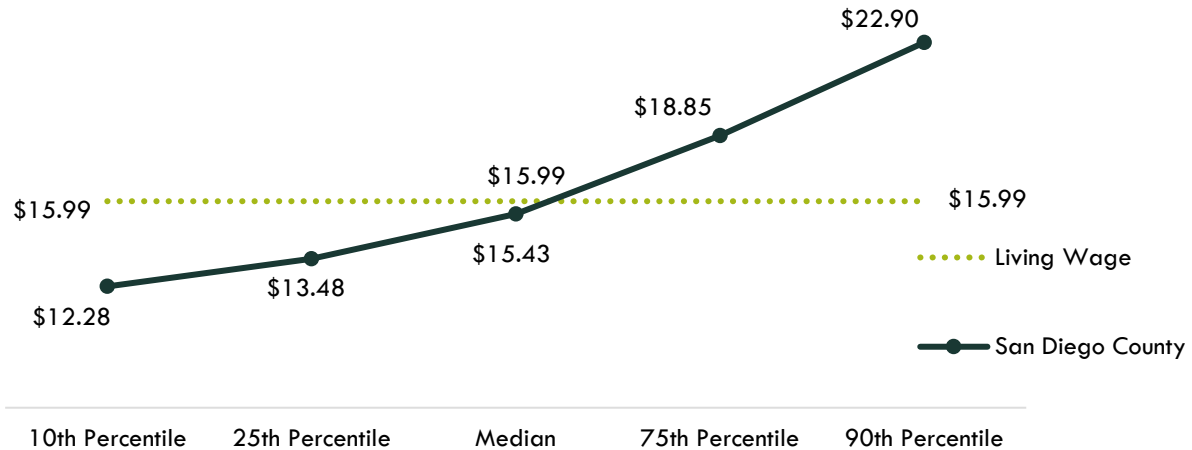
³ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

⁴ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.

Earnings

Data Entry Keyers receive median hourly earnings of \$15.43; this is less than the living wage for a single adult in San Diego County, which is \$15.99 per hour (Exhibit 3).⁵

Exhibit 3: Hourly Earnings⁶ for Data Entry Keyers in San Diego County⁷



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards conferred by a course or program in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.⁸ According to TOP and CIP⁹ data, five community colleges supply the region with for-credit awards for Software Applications (TOP 070210): Grossmont College, MiraCosta College, San Diego City College, San Diego Miramar College, and Southwestern College (Exhibit 4a).

⁵ "California Family Needs Calculator." Insight Center for Community Economic Development, last updated 2018. insightccd.org/2018-family-needs-calculator.

⁶ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁷ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

⁸ TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data)

⁹ There are three CIP codes related to Software Applications (TOP 070210): Data Entry/Microcomputer Applications, General (CIP 110601), Word Processing (CIP 110602), and Computer Software and Media Applications, Other (CIP 110899).

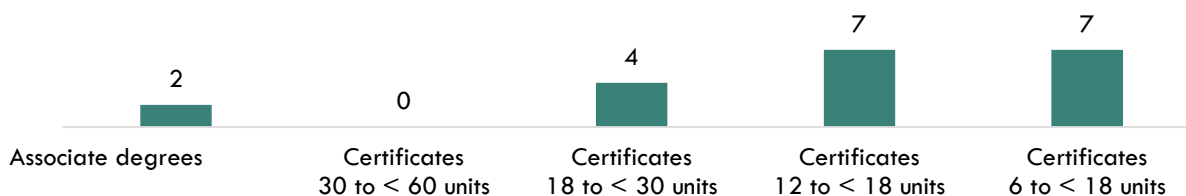
**Exhibit 4a: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Years 2015-16 through 2017-18)**

College	Award Type	PY 15-16	PY 16-17	PY 17-18	3-Year Avg
Grossmont	Associate of Science (A.S.) degree	1	2	0	1
	Certificate 18 to < 30 units	1	1	0	1
	Total	2	3	0	2
MiraCosta	Associate of Arts (A.A.) degree	1	0	1	1
	Certificate 18 to < 30 units	1	2	2	2
	Certificate 12 to < 18 units	9	4	4	6
	Certificate 6 to < 18 units	2	2	1	2
	Total	13	8	8	10*
San Diego City	Certificate 12 to < 18 units	1	0	2	1
	Certificate 6 to < 18 units	0	0	6	2
	Total	1	0	8	3
San Diego Miramar	Certificate 6 to < 18 units	0	2	7	3
	Total	0	2	7	3
Southwestern	Certificate 18 to < 30 units	1	1	0	1
	Certificate 12 to < 18 units	1	0	0	0
	Total	2	1	0	1
Total		18	14	23	18*

Note: The numbers may not add up exactly due to rounding.

Broken down by award type, the colleges awarded certificates with 6 to < 18 units (7), certificates with 12 to < 18 units (7), etc. (Exhibit 4b).

Exhibit 4b: Total Number of Awards by Type for Software Applications (TOP 070210) in San Diego County (Three-Year Average 2015-16 through 2017-18)



In terms of noncredit awards, only San Diego Continuing Education provides noncredit awards for Software Applications (TOP 070210), with an average of 27 noncredit awards between program years 2015-16 and 2017-18 (Exhibit 5).

Exhibit 5: Number of Noncredit Awards (Certificates and Degrees) Conferred by SDCE (Program Years 2015-16 through 2017-18)

Program Title	Award Type	PY 15-16	PY 16-17	PY 17-18	3-Year Avg
Mobile Application Development	Program Award	0	18	63	27

Demand vs. Supply

In short, the region supplies 45 for-credit and noncredit awards for 217 annual job openings, suggesting that there is a labor market supply gap (Exhibit 6).

Exhibit 6: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

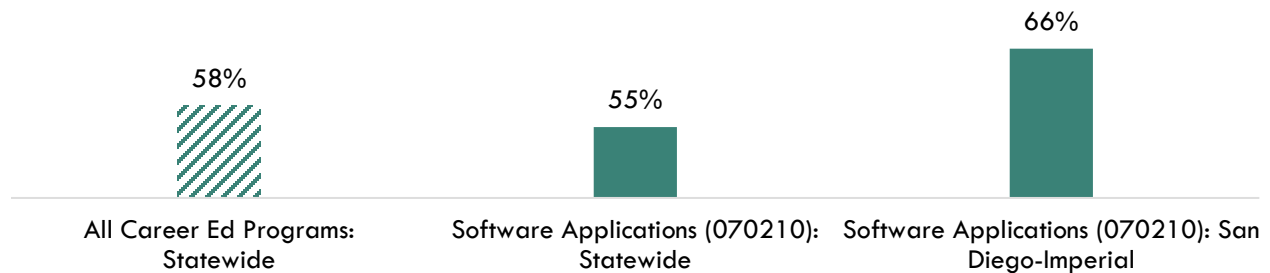
TOP6 Program	Demand (Annual Openings)	Supply (Total Annual Average Supply)		Supply Gap or Oversupply
		Noncredit	For-Credit	
Software Applications (TOP 070210)	217	27	18	172

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

Student Outcomes and Regional Comparisons

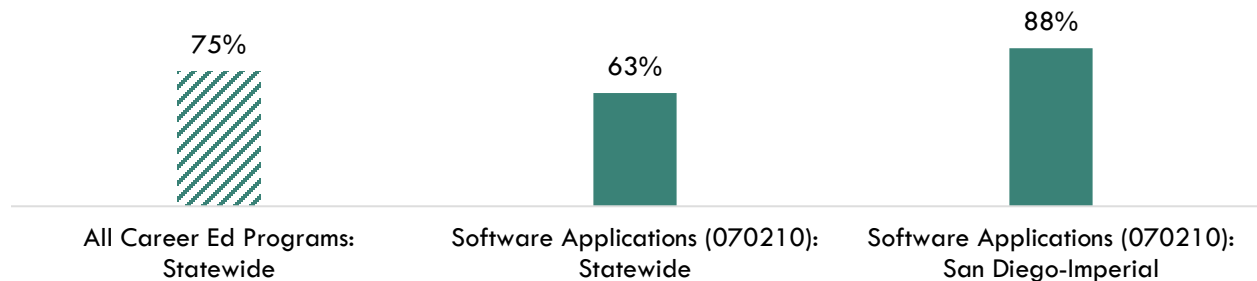
According to the California Community Colleges LaunchBoard, 66 percent of students in the San Diego-Imperial region earned a living wage after completing a Software Applications (070210) program, compared to 55 percent statewide and 58 percent of students in Career Education programs in general across the state (Exhibit 7a).

Exhibit 7a: Proportion of Students Who Earned a Living Wage, PY2015-16¹⁰



According to the California Community Colleges LaunchBoard, 88 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a Software Applications (070210) program, compared to 63 percent statewide and 75 percent of students in Career Education programs in general across the state (Exhibit 7b).

Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study, PY2014-15¹¹



¹⁰ Among completers and skills builders who exited, the proportion of students who attained a living wage.

¹¹ Most recent year with available data is Program Year 2014-15. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Top Employers and Work Locations

Between January 1, 2016 and December 31, 2018, the top five employers in San Diego County for this occupation were [Laboratory Corporation of America](#), [Medical Professionals](#), [Ultimate](#), [Crossmark](#), and [Advantage Sales & Marketing](#) (Exhibit 8).

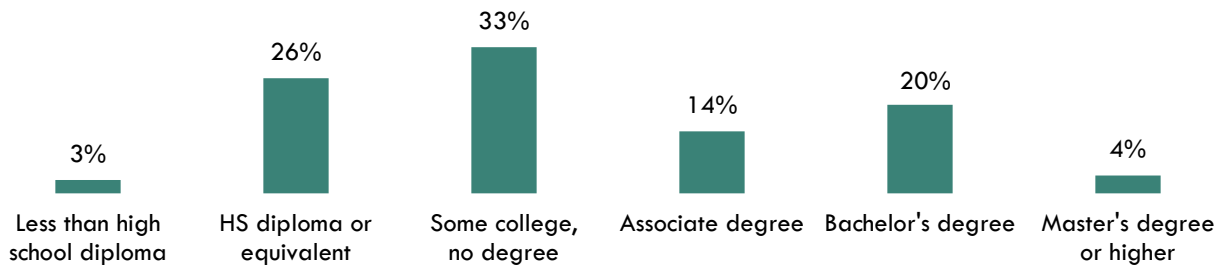
Exhibit 8: Top Employers in San Diego County for *Data Entry Keyers*¹²

Top Employers	
<ul style="list-style-type: none"> • Laboratory Corporation of America • Medical Professionals • Ultimate • Crossmark • Advantage Sales & Marketing 	<ul style="list-style-type: none"> • Morris Cerullo World Evangelism • Mike Roberts • General Atomics • ATK • Mjol Company Profile

Skills, Education, and Certifications

Exhibit 9a indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is [short-term on-the-job training](#). The typical entry-level education is a [high school diploma or equivalent](#).¹³

Exhibit 9a: National Educational Requirements for *Data Entry Keyers*¹⁴



*May not add to 100% due to rounding

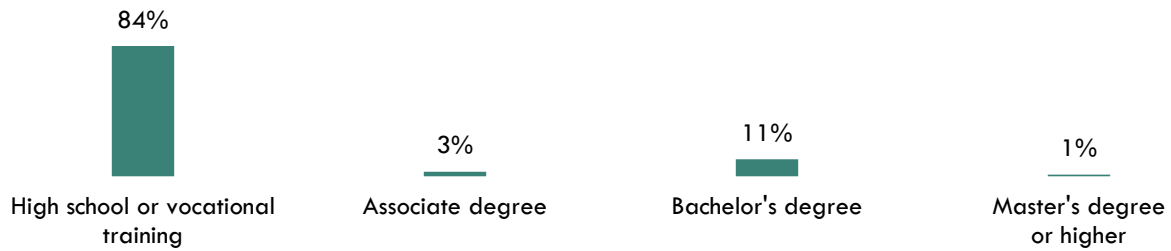
¹² Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

¹³ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

¹⁴ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

Based on online job postings between January 1, 2016 and December 31, 2018, the top listed educational requirement for *Data Entry Keyers* was a **high school diploma or vocational training** (Exhibit 9b).¹⁵

Exhibit 9b: Educational Requirements for *Data Entry Keyers* in San Diego County in Online Job Postings¹⁶



*May not add to 100% due to rounding

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2016 and December 31, 2018.

Exhibit 10: Top Skills for *Data Entry Keyers* in San Diego County¹⁷

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Data Entry • Spreadsheets • Customer Service • Accounting • Sorting 	<ul style="list-style-type: none"> • Detail-Oriented • Typing • Communication Skills • Organizational Skills • Computer Literacy 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft Word • Microsoft Processing • Microsoft Outlook • Salesforce

¹⁵ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

¹⁶ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified October 18, 2018. bls.gov/emp/tables/educational-attainment.htm.

¹⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

Prepared by:

Tina Ngo Bartel, Director

John Edwards, Research Analyst

San Diego-Imperial Center of Excellence for Labor Market Research

tngobartel@miracosta.edu

jedwards@miracosta.edu



Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.