

March 2021

Labor Market Analysis

Digital Media and Marketing

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Prepared by the Central Valley/Mother Lode Center of Excellence

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COVID-19 Statement: This report includes employment projection data by Emsi. Emsi’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email seronellon@mjc.edu.

Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for digital media and marketing. Five occupations related to digital media and marketing were identified for Cerro Coso Community College:

- 27-1024, Graphic Designers
- 15-1257, Web Developers and Digital Interface Designers
- 27-1014, Special Effects Artists and Animators
- 27-1021 Commercial and Industrial Designers
- 43-9031, Desktop Publishers

Key findings:

- **Occupational demand** — More than 1,600 workers were employed in jobs related to digital media and marketing in 2019 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is graphic designers with 859 workers in 2019, a projected decline in employment of 1% over the next five years, and 77 annual openings.
- **Wages** — Commercial and industrial designers earn the highest entry-level wage, \$23.91/hour in the subregion and \$27.27/hour in the region.
- **Employers** — Employers with the most job postings in the subregion are Anthem Blue Cross, Skyrocket Ventures, and Dcs Corporation.
- **Occupational titles** — The most common occupational title in job postings in the subregion is web developers. The most common job title is graphic designer.
- **Skills and certifications** — The top baseline skill is communication, the top specialized skill is JavaScript, and the top software skill is JavaScript. The most in-demand certification is a security clearance.
- **Education** — An associate degree is typically required for web developers and digital interface designers, and desktop publishers. A bachelor's degree is typically required for the remaining three occupations.
- **Supply** — Analysis of postsecondary completions in the region shows that on average 72 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 130 trained workers in the subregion and 167 workers in the region. The Center of Excellence recommends that Cerro Coso Community College work with the ICT/DM Regional Director, the college's advisory board, and local industry in the development of programs to address the shortage of digital media and marketing workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Cerro Coso Community College to provide labor market information for digital media and marketing. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is \$10.30/hour.¹ Analysis of the program and occupational data related to digital media and marketing resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 27-1024, Graphic Designers
- 15-1257, Web Developers and Digital Interface Designers
- 27-1014, Special Effects Artists and Animators
- 27-1021, Commercial and Industrial Designers
- 43-9031, Desktop Publishers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below. Data was not available for web developers and digital interface designers.

Graphic Designers

Job Description: Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.

Knowledge: Design, Communications and Media, English Language, Fine Arts, Computers and Electronics

Skills: Active Listening, Critical Thinking, Speaking, Reading Comprehension, Active Learning

Special Effects Artists and Animators

Job Description: Create special effects or animations using film, video, computers, or other electronic tools and media for use in products, such as computer games, movies, music videos, and commercials.

Knowledge: Computers and Electronics, English Language, Design, Communications and Media, Customer and Personal Service

Skills: Active Listening, Critical Thinking, Reading Comprehension, Speaking, Active Learning

Commercial and Industrial Designers

Job Description: Design and develop manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.

Knowledge: Design, Engineering and Technology, Mechanical, Production and Processing, Computers and Electronics

Skills: Active Listening, Reading Comprehension, Complex Problem Solving, Critical Thinking, Speaking

Desktop Publishers

Job Description: Format typescript and graphic elements using computer software to produce publication-ready material.

Knowledge: Computers and Electronics, Design, English Language, Production and Processing, Communications and Media

Skills: Critical Thinking, Reading Comprehension, Active Listening, Judgement and Decision Making, Speaking

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Occupational Demand

The South Central Valley/Southern Mother Lode subregion employed 1,612 workers in digital media and marketing occupations in 2019 (Exhibit 1). The largest occupation is graphic designers with 859 workers in 2019. This occupation is projected to decline 1% over the next five years but has the greatest number of projected annual openings, 77.

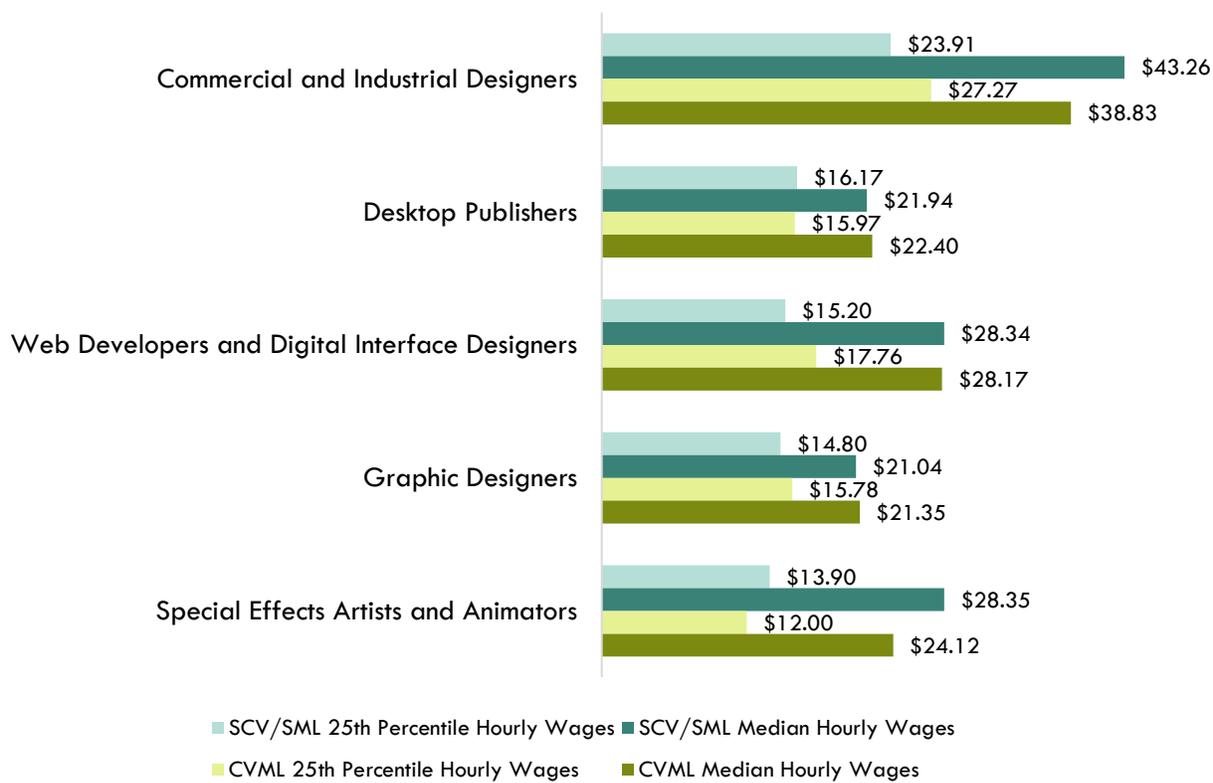
Exhibit 1. Digital media and marketing employment and occupational projections in the subregion

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
Graphic Designers	859	851	(8)	(1%)	77
Web Developers and Digital Interface Designers	396	424	28	7%	34
Special Effects Artists and Animators	243	230	(13)	(5%)	23
Commercial and Industrial Designers	86	85	(1)	(1%)	8
Desktop Publishers	28	23	(5)	(18%)	3
TOTAL	1,612	1,613	1	0%	145

Wages

Exhibit 2 compares the entry-level and experienced wages of the digital media and marketing occupations. Commercial and industrial designers earn the highest entry-level wage, \$23.91/hour in the subregion and \$27.27/hour in the region.

Exhibit 2. Entry-level and experienced wage comparison in the SCV/SML subregion and region



Median salary data from Emsi shows that commercial and industrial designers earn the highest median salary, more than \$89,900 annually, followed by special effects artists and animators, more than \$58,900 annually.

Exhibit 3. Median salaries for digital media and marketing occupations

Occupation	Median Salary
Commercial and Industrial Designers	\$89,986.89
Special Effects Artists and Animators	\$58,977.80
Web Developers and Digital Interface Designers	\$58,942.95
Desktop Publishers	\$45,638.82
Graphic Designers	\$43,771.13

Job Postings

There were 240 job postings for the five occupations in the SCV/SML subregion from September 2020 to February 2021.² The employers with the most job postings are listed in Exhibit 4.

Exhibit 4. Top employers of digital media and marketing by number of job postings

Employer	Job Postings	% Job Postings
Anthem Blue Cross	15	18%
Skyrocket Ventures	6	7%
Dcs Corporation	5	6%
Nucamp	5	6%
Perpetual Talent Solutions	5	6%
Clippard Instrument Laboratory, Inc	4	5%
Applied Materials	3	4%
Bcd Travel	3	4%
Cargill Incorporated	3	4%
Cbd Center LLC	3	4%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across five O*NET OnLine occupations. The occupational title web developers is listed in 157 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include graphic designer in 26 job postings, angular frontend developer in 11 job postings, and employee experience specialist in six job postings.

Exhibit 5. Top occupational titles in job postings for digital media and marketing

Occupational Title	Job Postings	% of Job Postings
Web Developers	157	65%
Graphic Designers	56	23%
Commercial and Industrial Designers	21	9%
Multimedia Artists and Animators	4	2%
Desktop Publishers	2	1%

² Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Education

Of the 240 job postings, 116 listed an education level preferred for the positions being filled. Among those, 86% requested a bachelor's degree, 12% requested a master's degree, and 11% requested high school or vocational training (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

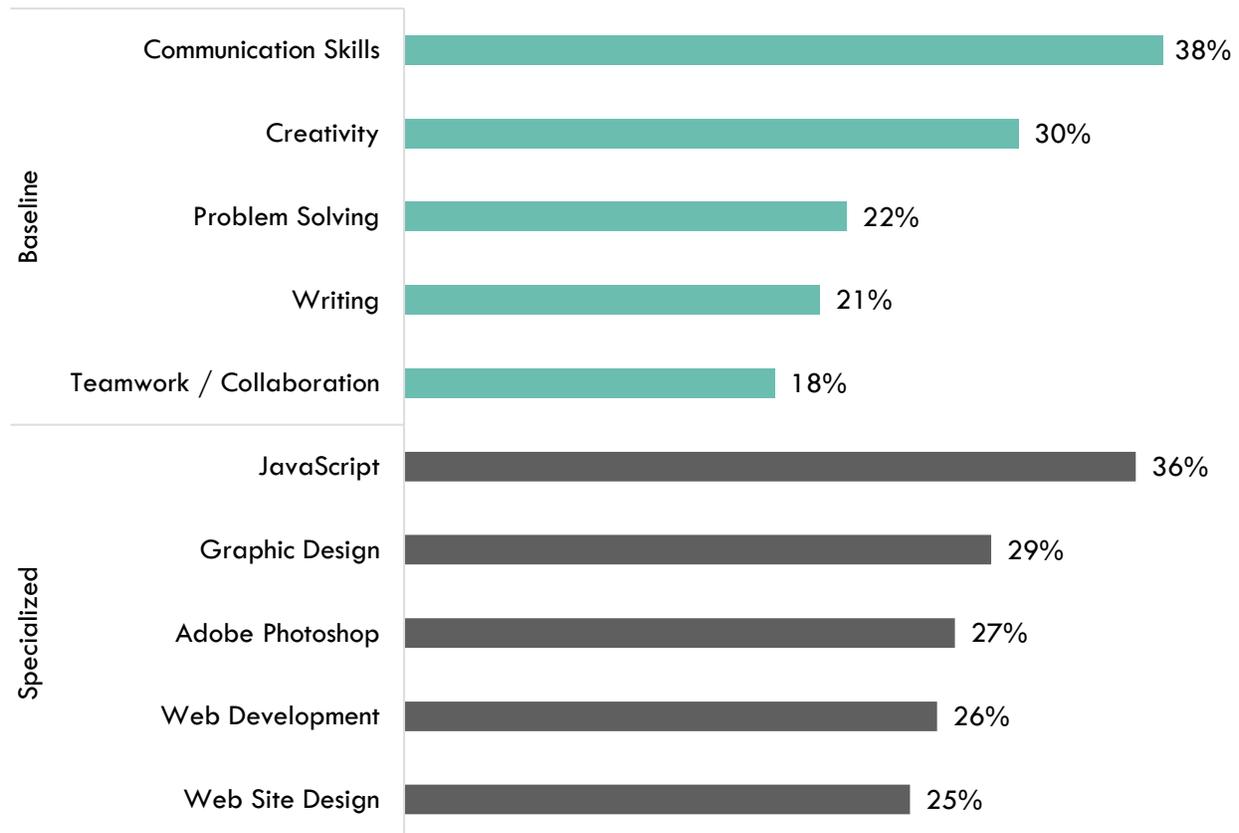
Exhibit 6. Education levels requested in job postings for digital media and marketing

Education Level	Job Postings	% of Job Postings
Bachelor's degree	100	86%
Master's degree	14	12%
High school or vocational training	13	11%
Associate degree	5	4%
Doctoral degree	1	1%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication, 38% of job postings, creativity, 30%, and problem solving, 22%. The top three specialized skills are JavaScript, 36% of job postings, graphic design, 29%, and Adobe Photoshop, 27%.

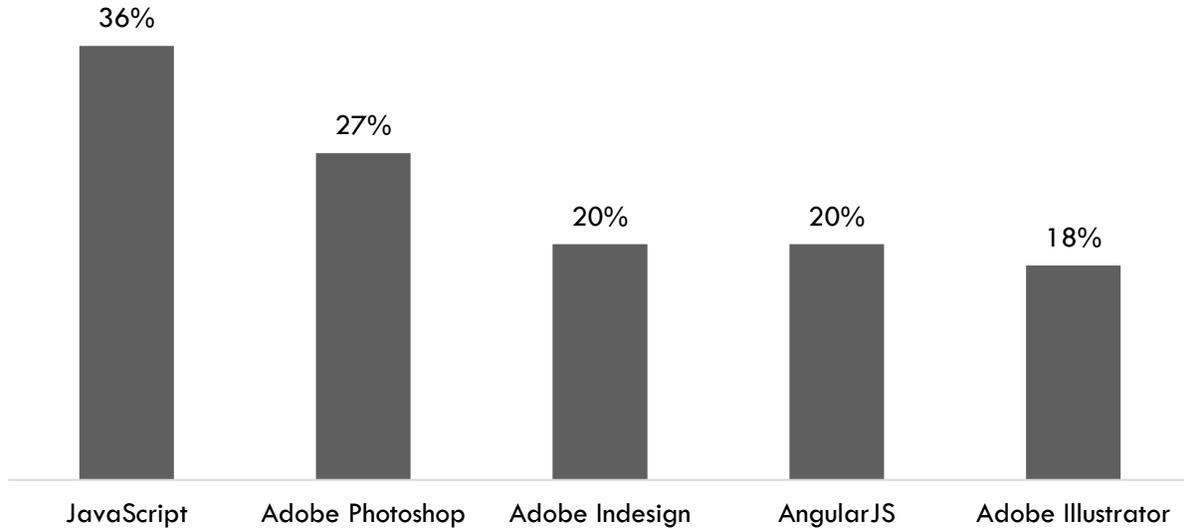
Exhibit 7. In-demand digital media and marketing baseline and specialized skills



Software Skills

Analysis also included the software skills most in demand by employers. JavaScript and Adobe Photoshop were the top two software skills identified in job postings (Exhibit 8).

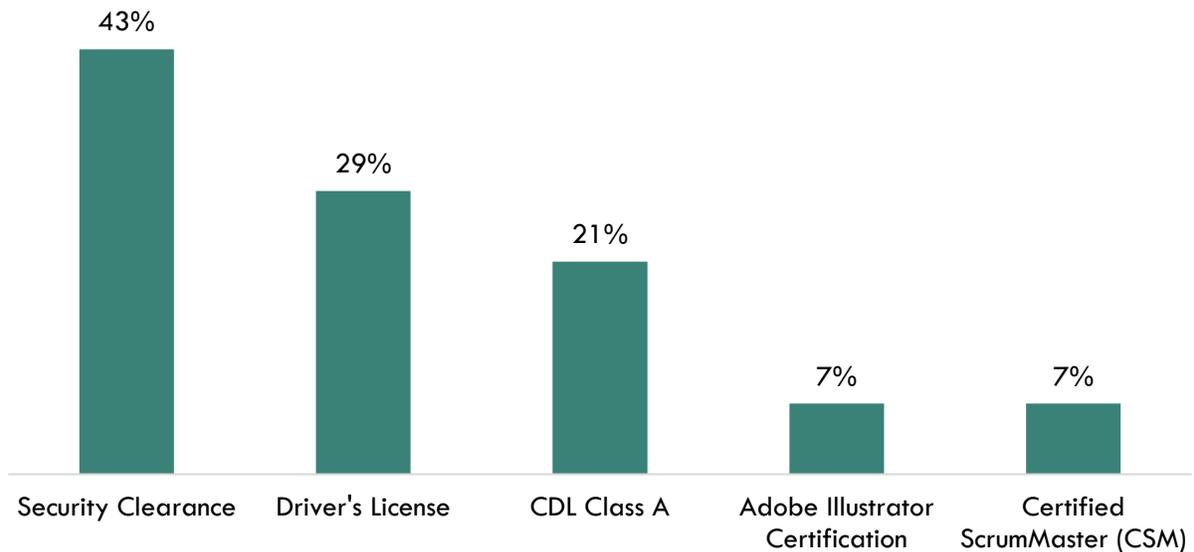
Exhibit 8. In-demand digital media and marketing software skills



Certifications

Of the 240 job postings, 14 contained certification data. Among those, 43% indicated a need for a security clearance. The next top certifications are driver's license and CDL Class A (Exhibit 9). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

Exhibit 9. Top digital media and marketing certifications requested in job postings



Education, Work Experience & Training

An associate degree is typically required for web developers and digital interface designers, and desktop publishers (Exhibit 10). A bachelor's degree is typically required for graphic designers, special effects artists and animators, and commercial and industrial designers.

Exhibit 10. Education, work experience, training, Current Population Survey results, and Bureau of Labor Statistics results for digital media and marketing occupations³

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS	BLS
Graphic Designers	Bachelor's degree	None	None	28.3%	23.0%
Web Developers and Digital Interface Designers	Associate degree	None	None	25.0%	34.0%
Special Effects Artists and Animators	Bachelor's degree	None	None	27.2%	
Commercial and Industrial Designers	Bachelor's degree	None	None	28.3%	27.0%
Desktop Publishers	Associate degree	None	Short-term	41.1%	34.0%

³ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

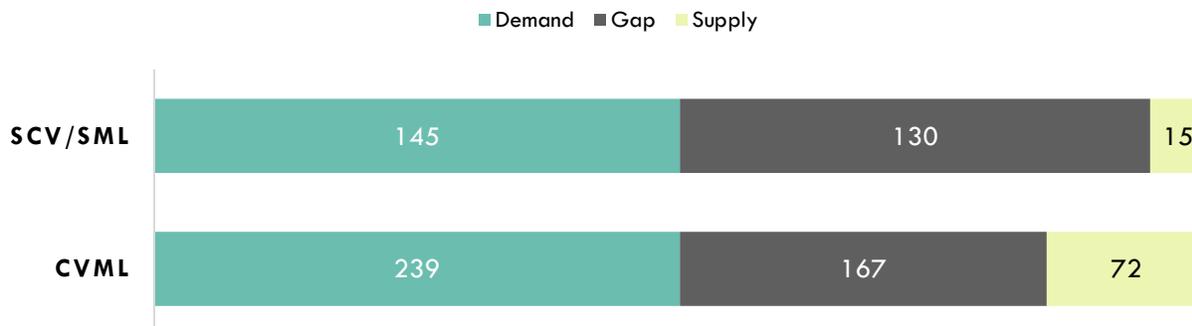
Analysis of program data from the California Community Colleges Chancellor’s Office Data Mart included the TOP codes and titles: 061400 - Digital Media; 101300 - Commercial Art; and 103000 - Graphic Art and Design. Analysis of the last three years of data shows that, on average, 72 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for digital media and marketing occupations in the region

TOP or CIP Title-Code	College	Associate Degree	Certificate 12 < 18 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Subtotal
061400 - Digital Media	Columbia	2		1		1	3
	Sequoias					1	1
101300 - Commercial Art	Porterville	4					4
	Sequoias				1		1
103000 - Graphic Art and Design	Bakersfield	9			17		25
	Fresno City	6			6		11
	San Joaquin Delta	10			2		12
	Sequoias	2	3			10	15
TOTAL		32	3	1	26	11	72

There is an undersupply of 130 digital media and marketing workers in the SCV/SML subregion and 167 workers in the region (Exhibit 12).

Exhibit 12. Digital media and marketing workforce annual demand and supply in the SCV/SML subregion and region



Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor’s Cal-PASS Plus LaunchBoard for the TOP codes related to digital media and marketing. There were 52 graphic art and design students who received a degree or certificate or attained apprenticeship journey status and 78 who transferred; 43% of students obtained a job closely related to their field of study; 39% reported a median change in earnings; and 53% attained a living wage. By comparison, there were 36 digital media students who received a degree or certificate or attained apprenticeship journey status and 73 who transferred; 50% of students obtained a job closely related to their field of study; 48% reported a median change in earnings; and 47% attained a living wage.

Exhibit 13. Regional metrics for the TOP codes related to digital media and marketing

Metric	Digital Media 061400	Graphic Art and Design 103000
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	36	52
Number of Students Who Transferred	73	78
Job Closely Related to Field of Study	50%	43%
Median Change in Earnings	48%	39%
Attained a Living Wage	47%	53%
* denotes data not available.		

Conclusion

The entry-level wages of the five occupations exceed the SCV/SML subregion's average living wage. There were 240 job postings in the past six months for occupations related to digital media and marketing in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication, and the top specialized skill is JavaScript.
- The top software skill is JavaScript.
- The top certification is a security clearance.

There is an undersupply of trained workers, a shortage of 130 in the SCV/SML subregion and 167 in the region.

Recommendation

Based on these findings, it is recommended that Cerro Coso Community College work with the ICT/DM Regional Director, the college's advisory board, and local industry in the development of programs to address the shortage of digital media and marketing in the region.

Appendix A: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.