



# The Economic Value of Career and Technical Education at San Diego City College



**CAREER AND TECHNICAL EDUCATION**<sup>1</sup> (CTE) at San Diego City College (SDCC) creates value in many ways. SDCC plays a key role in helping CTE students increase their employability and achieve their individual potential. The college draws CTE students to the county, generating new dollars and opportunities for San Diego County. SDCC's CTE provides students with the training and skills they need to have fulfilling and prosperous careers. Furthermore, SDCC is a place for CTE students to meet new people, increase their self-confidence, and promote their overall health and well-being.

SDCC's CTE influences both the lives of students and the county economy. SDCC's CTE supports a variety of industries in San Diego County, serves county businesses, and benefits society as a whole in California from an expanded economy and improved quality of life. Additionally, the benefits created by SDCC's CTE extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by SDCC's CTE on the business community and the benefits CTE generates in return for the investments made by its key stakeholder groups—students, taxpayers, and society. The following two analyses are presented:



### Economic impact analysis



### Investment analysis

All results reflect employee, student, and financial data, provided by the college, for fiscal year (FY) 2019-20. Impacts on the San Diego County economy are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, taxpayers, and society in California are reported under the investment analysis.

<sup>1</sup> Career and Technical Education (CTE) is defined at the course level and includes courses coded A-C (Apprenticeship, Advanced Occupational, and Clearly Occupational).

SDCC's CTE influences both the **lives of its students** and the **county economy**.





SDCC's CTE promotes economic growth in San Diego County through its direct expenditures and the resulting expenditures of students and county businesses. CTE serves as an employer and buyer of goods and services for its day-to-day operations. The college's CTE course offerings attract students from outside San Diego County, whose expenditures benefit county vendors. In addition, SDCC CTE is an important source of higher education to San Diego County residents and a supplier of trained workers to county industries, enhancing overall productivity in the county workforce.

## Operations spending impact



SDCC's CTE adds economic value to San Diego County as an employer of county residents and a large-scale buyer of goods and services. In FY 2019-20, the college employed 518 full-time and part-time CTE faculty and staff, 97% of whom lived in San Diego County.<sup>2</sup> Payroll amounted to \$22.3 million, much of which was spent in the county for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, SDCC's CTE spent \$11.3 million on day-to-day expenses related to facilities, supplies, and professional services.<sup>3</sup>

SDCC's CTE day-to-day operations spending added \$30.9 million in income to the county during the analysis year. This figure represents the college's CTE payroll, the multiplier effects generated by the in-county spending of CTE and its employees, and a downward adjustment to account for funding received from county sources. The \$30.9 million in added income is equivalent to supporting 567 jobs in the county.

## Student spending impact



Around 4% of CTE students attending SDCC originated from outside the county in FY 2019-20, and some of these students relocated to San Diego County to attend SDCC. These students may not have come to the county if SDCC's CTE did not exist. In addition, some in-county CTE students, referred to as retained students, would have left San Diego County if not for the existence of SDCC's CTE. While attending the college, these relocated and retained CTE students spent money on groceries, accommodation,

<sup>2</sup> Due to data limitations, the number of faculty and staff was estimated using a proportion based on CTE headcount.

<sup>3</sup> Due to data limitations, revenue and expenditure data were estimated using a proportion based on CTE headcount.

### IMPACTS CREATED BY SDCC'S CTE IN FY 2019-20



Operations spending impact

**\$30.9 million**



Student spending impact

**\$15.4 million**



Alumni impact

**\$320.4 million**



TOTAL ECONOMIC IMPACT

**\$366.6 million**

OR

Jobs supported

**4,521**

transportation, and other household expenses. This spending generated \$15.4 million in added income for the county economy in FY 2019-20, which supported 239 jobs in San Diego County.

## Alumni impact



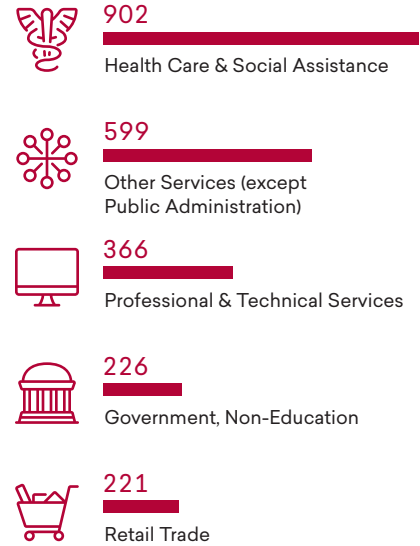
The education and training SDCC's CTE provides for county residents has the greatest impact. Since its establishment, students have enrolled in SDCC's CTE and entered the county workforce with greater knowledge and new skills. Today, hundreds of former SDCC CTE students are employed in San Diego County. As a result of their education from SDCC's CTE, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2019-20, SDCC's CTE alumni generated \$320.4 million in added income for the county economy, which is equivalent to supporting 3,715 jobs.

## Total impact

SDCC's CTE added \$366.6 million in income to the San Diego County economy during the analysis year, equal to the sum of the operations spending impact, the student spending impact, and the alumni impact.

SDCC's CTE total impact can also be expressed in terms of jobs supported. The \$366.6 million impact supported 4,521 county jobs, using the jobs-to-sales ratios specific to each industry in the county. In addition, the \$366.6 million, or 4,521 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, SDCC's CTE spending and alumni in the Health Care & Social Assistance industry sector supported 902 jobs in FY 2019-20. If SDCC's CTE did not exist, these impacts would not have been generated in San Diego County.

### SDCC'S CTE IMPACTS BY INDUSTRY (JOBS SUPPORTED)





An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. If the benefits outweigh the costs, then the investment is financially worthwhile. The analysis presented here considers SDCC's CTE as an investment from the perspectives of students, taxpayers, and society in California.

## Student perspective



In FY 2019-20, SDCC's CTE served 7,118 students. CTE students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, CTE students gave up money they would have otherwise earned had they been working instead of attending college. The total investment made by SDCC's CTE students in FY 2019-20 amounted to a present value of \$35.2 million, equal to \$9.2 million in out-of-pocket expenses (including future principal and interest on student loans) and \$25.9 million in forgone time and money.

In return for their investment, SDCC's CTE students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average SDCC CTE associate degree graduate from FY 2019-20 will see annual earnings that are \$12,800 higher than a person with a high school diploma or equivalent working in California. Over a working lifetime, the benefits of the associate degree over a high school diploma will amount to an undiscounted value of \$499,200 in higher earnings per graduate. The present value of the cumulative higher future earnings that SDCC's FY 2019-20 CTE students will receive over their working careers is \$237.6 million.

The CTE students' benefit-cost ratio is 6.8. In other words, for every dollar CTE students invest in their education at SDCC in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$6.80 in

### CTE STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN SDCC



Average annual return for SDCC CTE students  
**22.9%**



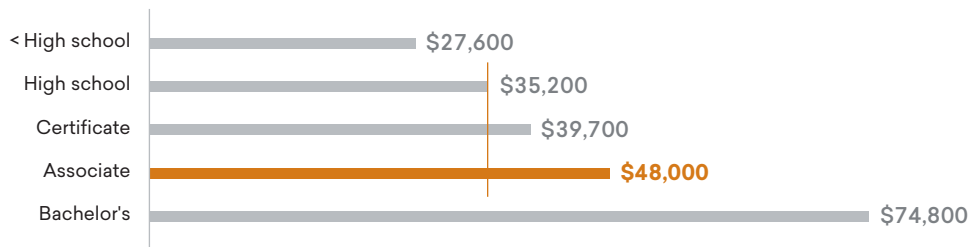
Stock market 30-year average annual return  
**10.6%**



Interest earned on savings account (National Rate Cap)  
**0.8%**

Source: Forbes' S&P 500, 1991-2020. FDIC.gov, 6-2021.

The average CTE associate degree graduate from SDCC will see an increase in earnings of **\$12,800** each year compared to a person with a high school diploma or equivalent working in California.



Source: Emsi Burning Glass employment data.

higher future earnings. Annually, the CTE students' investment has an average annual internal rate of return of 22.9%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.6%.

## Taxpayer perspective



SDCC's CTE generates more in tax revenue than it takes. These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added revenue created in the state.

As SDCC's CTE students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2019-20 CTE students' working lives, the state and local government will have collected a present value of \$85.2 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of SDCC's CTE students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The educations that SDCC's CTE students receive will generate savings in three main categories: 1) healthcare, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. SDCC CTE students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers.<sup>4</sup> Altogether, the present value of the benefits associated with an education from SDCC's CTE will generate \$9 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$94.2 million, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$30.6 million, equal to the amount of state and local government funding SDCC's CTE received in FY 2019-20. These benefits and costs yield a benefit-cost ratio of 3.1. This means that for every dollar of public money invested in SDCC's CTE in FY 2019-20, taxpayers will receive a cumulative present value of \$3.10 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 7.9%, which compares favorably to other long-term investments in the public and private sectors.

For every dollar of public money invested in SDCC's CTE, taxpayers will receive a cumulative value of **\$3.10** over the course of the students' working lives.

## Social perspective



Society as a whole in California benefits from the presence of SDCC's CTE in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from CTE students' increased lifetime earnings (added student income) and increased business output (added business income), which raise economic prosperity in California.

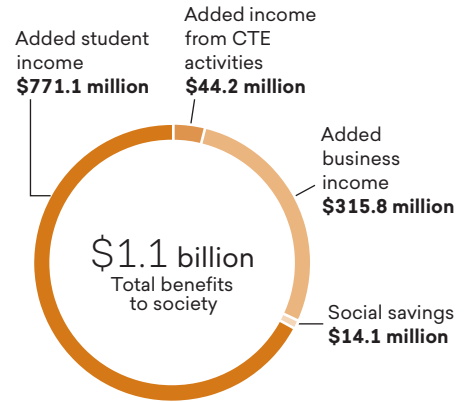
<sup>4</sup> For a list of study references, contact the San Diego & Imperial County Community College Association (SDICCCA) for a copy of the main report completed for SDICCCA.

Benefits to society also consist of the savings generated by the improved lifestyles of SDCC's CTE students. As discussed in the previous section, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Healthcare savings include avoided medical costs associated with smoking, alcohol dependence, obesity, drug abuse, and depression. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims.

Altogether, the social benefits of SDCC's CTE equal a present value of \$1.1 billion. These benefits include \$771.1 million in added student income, \$315.8 million in added business income, \$44.2 million in added income from CTE activities, as well as \$14.1 million in social savings related to health, crime, and income assistance in California. People in California invested a present value total of \$66.9 million in SDCC's CTE in FY 2019-20. The cost includes all the CTE and student costs.

The benefit-cost ratio for society is 17.1, equal to the \$1.1 billion in benefits divided by the \$66.9 million in costs. In other words, for every dollar invested in SDCC's CTE, people in California will receive a cumulative value of \$17.10 in benefits. The benefits of this investment will occur for as long as SDCC's FY 2019-20 CTE students remain employed in the state workforce.

SOCIAL BENEFITS IN CALIFORNIA FROM SDCC'S CTE



Source: Emsi Burning Glass impact model.

### Summary of investment analysis results

The results of the analysis demonstrate that SDCC's CTE is a strong investment for all three major stakeholder groups—students, taxpayers, and society. As shown, CTE students receive a great return for their investments in an education at SDCC. At the same time, taxpayers' investment in SDCC's CTE returns more to government budgets than it costs and creates a wide range of social benefits throughout California.

STUDENT PERSPECTIVE		TAXPAYER PERSPECTIVE		SOCIAL PERSPECTIVE	
Present value benefits <b>\$237.6 million</b>		Present value benefits <b>\$94.2 million</b>		Present value benefits <b>\$1.1 billion</b>	
Present value costs <b>\$35.2 million</b>		Present value costs <b>\$30.6 million</b>		Present value costs <b>\$66.9 million</b>	
Net present value <b>\$202.5 million</b>		Net present value <b>\$63.5 million</b>		Net present value <b>\$1.1 billion</b>	
Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return
<b>6.8</b>	<b>22.9%</b>	<b>3.1</b>	<b>7.9%</b>	<b>17.1</b>	<b>n/a*</b>

\* The rate of return is not reported for the social perspective because the beneficiaries of the investment are not necessarily the same as the original investors.

# CONCLUSION

The results of this study demonstrate that SDCC's CTE creates value from multiple perspectives. SDCC's CTE benefits county businesses by increasing consumer spending in the county and supplying a steady flow of qualified, trained workers to the workforce. SDCC's CTE enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. It benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, SDCC's CTE benefits society as a whole in California by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.

## About the study

Data and assumptions used in the study are based on several sources, including the FY 2019-20 academic and financial reports from SDCC, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi Burning Glass's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the San Diego & Imperial County Community College Association (SDICCCA) for a copy of the main report completed for SDICCCA.

The results of this study demonstrate that SDCC's CTE creates value from **multiple perspectives.**



Emsi Burning Glass provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Emsi Burning Glass to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit [economicmodeling.com/higher-education](http://economicmodeling.com/higher-education) to learn more or connect with us.