BUSINESS NEEDS SURVEY REPORT

Pasadena City College

District 2019

PASADENA CITY COLLEGE

EWD

ECONOMIC & WORKFORCE DEVELOPMENT

TABLE OF CONTENTS

1. INTRODUCTION

The state of California is an economic powerhouse with a gross domestic product of $2.7 trillion. California's economy is the fifth largest in the world – ahead of the United Kingdom. While California hosts a number of high-tech companies, tech start-ups, and a vast agriculture industry, the largest share of jobs are those classified as middle-skills jobs. Middle-skills jobs are those requiring a postsecondary education, but less than a bachelor's degree. According to the National Skills Collation, middle-skills jobs account for 50% of California's labor market, but only 39% of workers in California have the necessary training for these jobs. This shortage is expected to increase, with projections indicating that by 2025, California will need one million additional middle-skills workers. The state of California recognizes the need and economic importance of investing in a skilled workforce. The state has implemented several initiatives to build and support a California economy suited for the future.

The Economic and Workforce Development Program (EWD) was enacted by the state legislature as a vehicle for the California Community Colleges (CCC) to invest in workforce improvement activities. One of the main programs under EWD is the Doing What MATTERS for Jobs and the Economy (DWM). This program creates a structure within industry sectors and geographic regions to foster career and technical education (CTE) across the community college system. The DWM program laid the foundation for California's ambitious Strong Workforce Program.

The Strong Workforce Program began in 2016 with the goal of closing the shortfall in middle-skill jobs through training one million middle-skills workers. This will not only meet the labor needs for the future economy, but create opportunities to further foster economic growth by moving more low-wage workers into living-wage jobs. The program focuses on improving CTE through increasing student enrollment in high-quality, high-demand educational programs. A key outcome of this program is more responsive educational programs that move students to completion, thus leading to employment and higher earnings.

Rather than a single initiative, the Strong Workforce Program focuses on regional differences in program needs, giving community colleges freedom to be responsive to local labor market conditions. The program goals are "data-driven", to drive innovation and create programs tailored to the fluctuating regional needs.

Pasadena City College & Strong Workforce Goals

Meeting the data-driven goal of the Strong Workforce Program, Pasadena Area Community College District conducted a Business Needs Assessment Survey. The PCC district is within the Los Angeles and Orange County region, serving Pasadena and the surrounding San Gabriel Valley. This area is home to 1.5 million people and over 19,000 businesses. Identifying the local area needs of businesses will help PCC take more steps to meet program goals.

The Business Needs Assessment Survey included several objectives. One is to identify employment trends, industry growth, and educational and skill requirements for entry level positions within the region. Another is to identify business use, perceptions, and acceptance of job shadowing and internships. Finally, information is collected on business perceptions of PCC and willingness to engage in partnerships for professional development.

Elder Tree was the data collector for this survey. Data was collected in the fall of 2018 and a total of 112 surveys were completed by businesses within the San Gabriel Valley. The distribution of industry sectors for participating businesses is shown in Figure 1. While this reflects a small fraction of the businesses within the San Gabriel Valley, the data collection effort targeted the industry sectors outlined by the Strong Workforce Program, excluding a large proportion of businesses. The data in this report provides Pasadena Area Community College District a high-level overview for determining what industry sectors to target resources with for further specification of business needs.
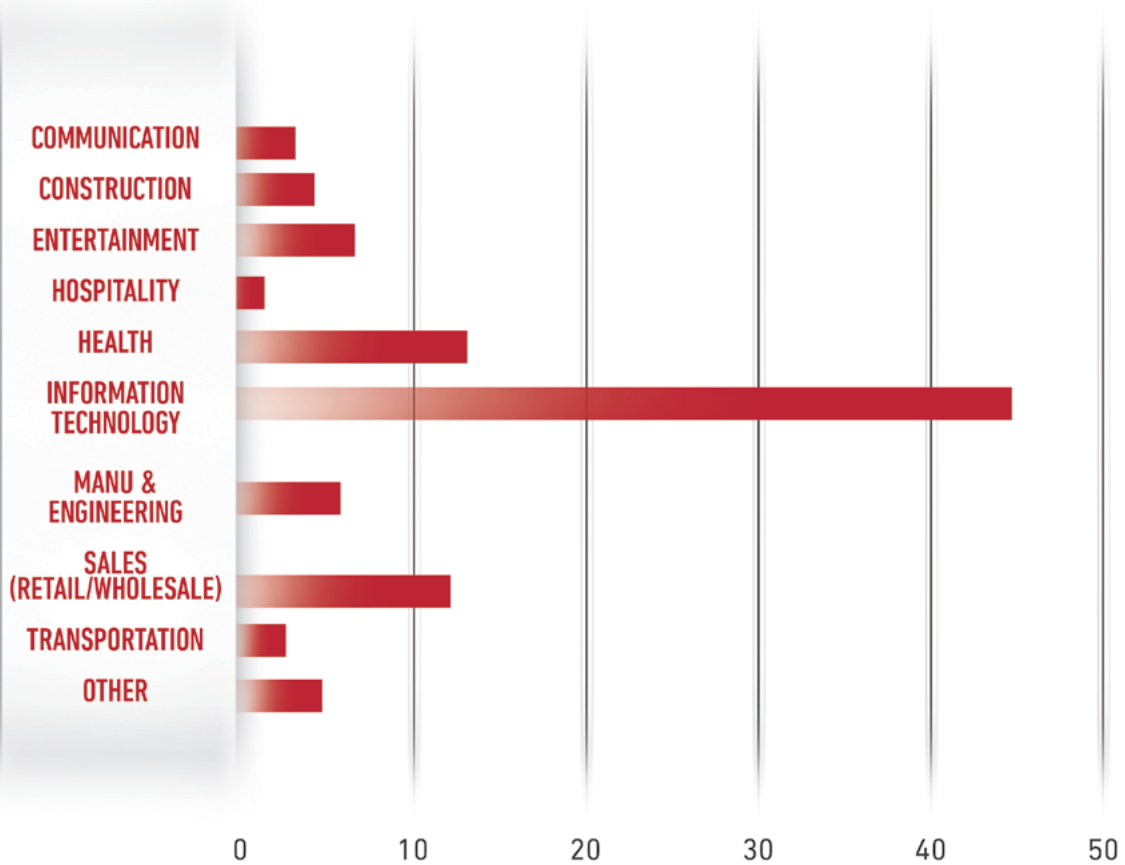
Figure 1-1. Distribution of participating businesses across self-identified industry

The largest number of participating businesses self-identified as primarily information technology, followed by health, sales, and entertainment. No respondent reported their business as energy (or energy-renewable), or utility sectors. The overwhelming representation of information technology businesses is likely a result that participants self-identified their business' primary industry. The U.S. government's official industry classification, the North American industry Classification System (NAICS), does not specifically define information technology as an industry sector. Instead technology jobs span a large number of industry sub-sectors and are prevalent in fields like communications and manufacturing. The industry sectors available for survey respondents to select from were based on emerging industry areas of interest to PCC. These constructs of interest may not have been clear to respondents who instead reported business fields that may have been more salient to them.

According to the Computing Technology Industry Association (2017), technology employment crosses many other industry sectors, other than those specifically focused in technology (e.g., software development), and is considered a second component of the technology workforce and nearly equals that of the technology sector. According to the same report, California leads the nation in technology employment and accounts for about 13% of its economy. This suggests that the findings from this report will have broad applications across industry sectors in emerging technology fields such as additive manufacturing, health informatics, and communication.

Table 1 shows the distribution of participating businesses by business size in terms of employment. Large businesses (those with 500 or more employees) represented the smallest proportion of participants which reflects their low incidence as a proportion of all businesses. Small businesses were fairly evenly distributed among the remaining categories, demonstrating good representation of different business sizes.

BUSINESS SIZE (NUMBER EMPLOYEES)	PERCENT
1-49	32.1%
50-199	32.1%
200-499	31.3%
500+	4.5%

Table 1-1. Distribution of participating businesses by employment size

This report presents findings from the Business Needs Assessment Survey conducted by Elder Tree for the Pasadena Area Community College District. The remainder of this report covers the three topical areas of the survey: business perceptions of industry growth and employment trends; educational and skill requirements for entry-level positions; business perceptions and opportunities for job shadowing and internships; and business perceptions of PCC and interest in collaborative opportunities. The final section of this report offers recommendations and future directions based on the survey findings.

Perceptions of Business Growth

Industry growth is an important consideration in determining future need for skilled labor. To determine how businesses feel about the potential for growth, we asked each to determine whether (compared to their last year of business) production or services would increase, stay the same, or decrease over defined time periods. These periods are defined as the near-term (next 12 months), the short-term (next 5 years), or the long-term (next 10 years).

When considering the near-term, short-term, and long-term prospects for industry growth, businesses generally had a positive outlook as shown in Figure 1. The outlook was generally more positive beyond the near-term (next 12 months). For the near-term period, 57% of business felt business demand would increase relative to the previous year, while only 4% felt demand would decrease. Businesses reporting decreased demand were generally from within retail or wholesale sales classification.
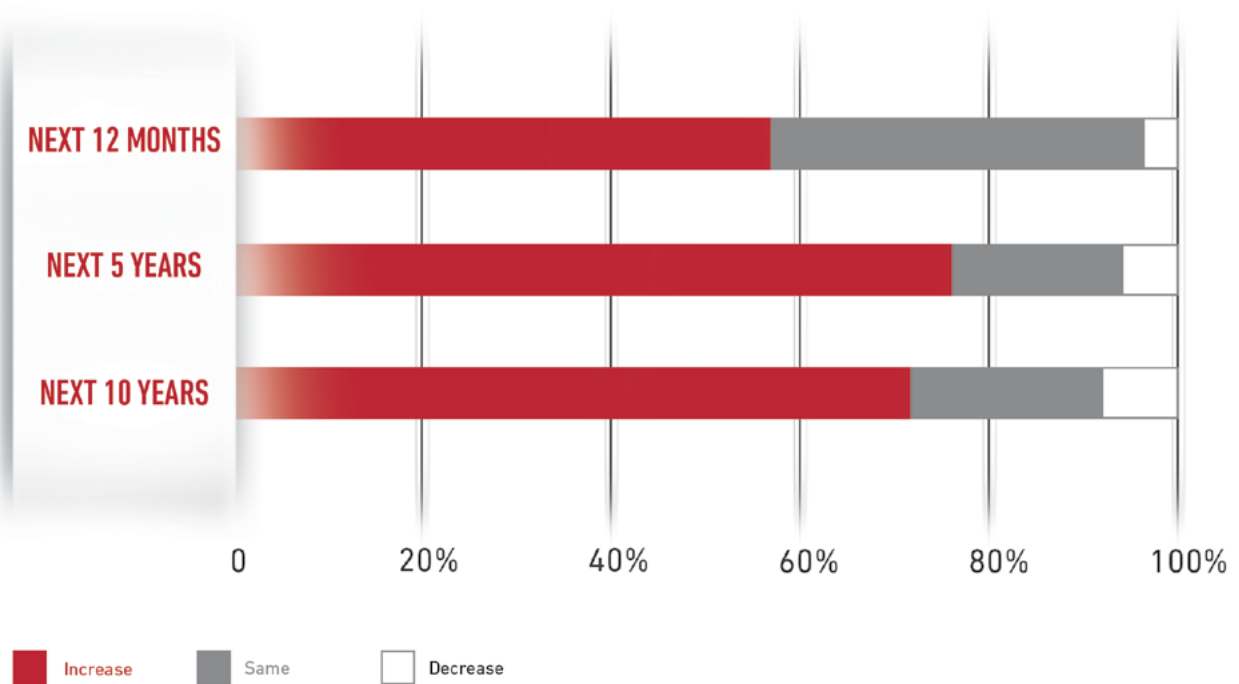
Figure 2-1. Business perceptions of growth across near-term, short-term, and long-term periods

Longer term projections were much more positive. For the short-term (next 5 years), 76% of businesses reported demand would increase, while for the long-term (next 10 years), 72% of businesses reported demand would increase. Business perceptions of decreasing demand peaked at 6% for the long-term period (next 10 years). The negative perception was low overall and not clustered within any specific business classification.

Overall, businesses reported that demand for their product or service will increase relative to business activity over the past year.

Barriers to Business Growth

Businesses were asked to report barriers that had a negative effect on business growth. The most reported barrier was competition from other businesses. This suggests that it will be important for businesses to maintain a competitive edge and that competition for skilled labor may increase. As shown in Figure 2, the second most reported barrier impacting business growth is a lack of skilled labor. Interestingly, labor wages were one of the least reported factors affecting business growth. In the current economic environment with low unemployment, this suggests that companies will be willing to compete for skilled labor.
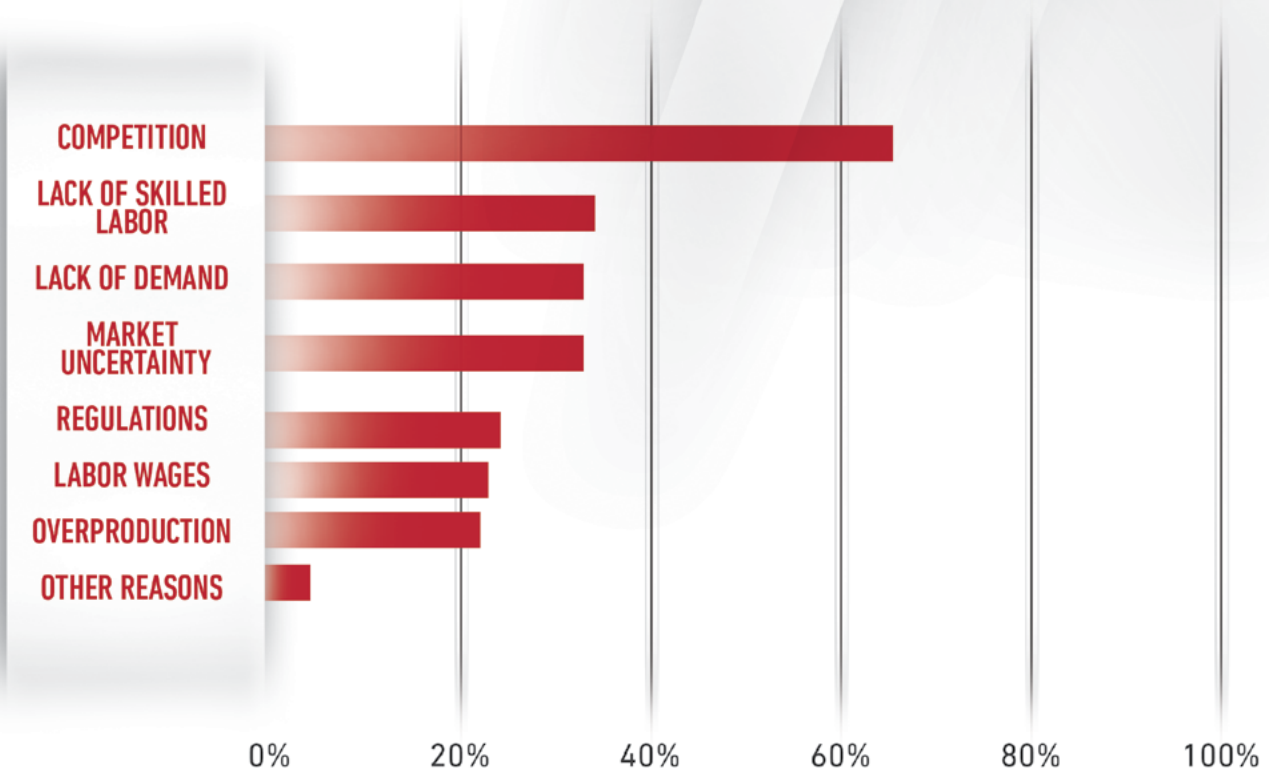
Figure 2-2. Reported factors affecting business growth

Barriers reported to affect business growth were reviewed among businesses that reported the future short-term or long-term growth outlook would remain unchanged. Approximately 20% of businesses reported unchanged sentiments. The results for reported barriers are largely unchanged when restricted to this group, with competition from other businesses as the most reported factor, followed by lack of demand (for their product or service), and lack of skilled labor.

Overall these findings suggest that in addition to competitive forces, identifying skilled labor will be important to growth and may be responsible for unchanged perceptions of future business demand. The low incidence of labor wages as a factor affecting growth, suggest that businesses will be willing to compete for labor with key industry skills.

Business Hiring Trends

Businesses were asked to report the number of new employees hired for 2018. Given the timing of the survey request, this would generally cover the first three quarters of 2018 and full-year projections would be expected to be higher.

Across all businesses, the mean number of new employees hired was 31 with a median of 12. As shown in Table 1, the mean number of employees hired was strongly associated with business size.

BUSINESS SIZE (NUMBER OF EMPLOYEES)	MEAN	MEDIAN
1 - 49	11.4	4.5
50 - 199	13.5	11.5
200 - 499	64.1	50.0
500+	84.0	100.0
All Businesses	30.8	12.0

Table 2-1. New employee hiring in 2018 by business size

About 55% of businesses reported hiring 10 or more employees in 2018. Of this group, most reported that few new staff were hired for entry-level positions. About 27% of businesses reported that fewer than 25% of new hires were for entry level positions, while 40% reported that 25% to less than 50% of new hires were for entry-level positions.

When it was necessary to hire new staff, nearly two-thirds of all businesses reported factors associated with company growth (i.e., company growth, or increased product/service demand) as the primary reason to hire (see Figure 3). Factors associated with staff turnover (i.e., voluntary or involuntary separation, or retirement) were reported by just under a quarter of businesses. Analyzing these results by company size reveals that factors associated with company growth remained a majority reason, but factors associated with turnover were reported more frequently for smaller companies. Turnover factors were reported by 36 % of small companies (1 – 49), compared to 22% for mid-size (50 – 199), and 12% for large companies (200 – 499).
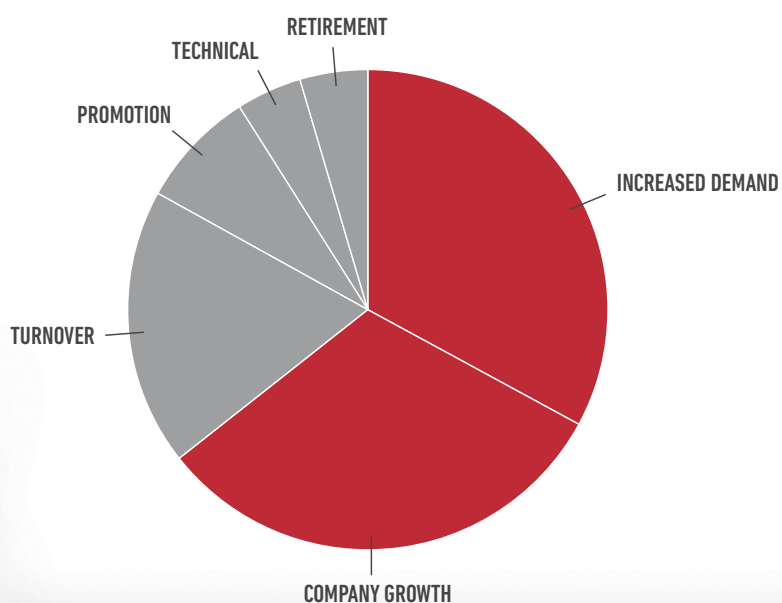

Figure 2-3. Distribution of primary reason for hiring new staff

While these results suggest that hiring is consistent and that finding skilled labor remains a top challenge, many of the positions filled by businesses in 2018 required some previous experience. When businesses find a need to hire new staff, they are usually driven by company growth factors.

Future Assessment of Hiring Needs

Businesses generally reported that in the short-term (1 to 5 years) there will be an increased need to hire new staff. Furthermore, businesses reported that this need will be greater in the long-term (6-10 year) time frame. These findings are in line with earlier reports that most businesses generally have expectations of future growth in business.
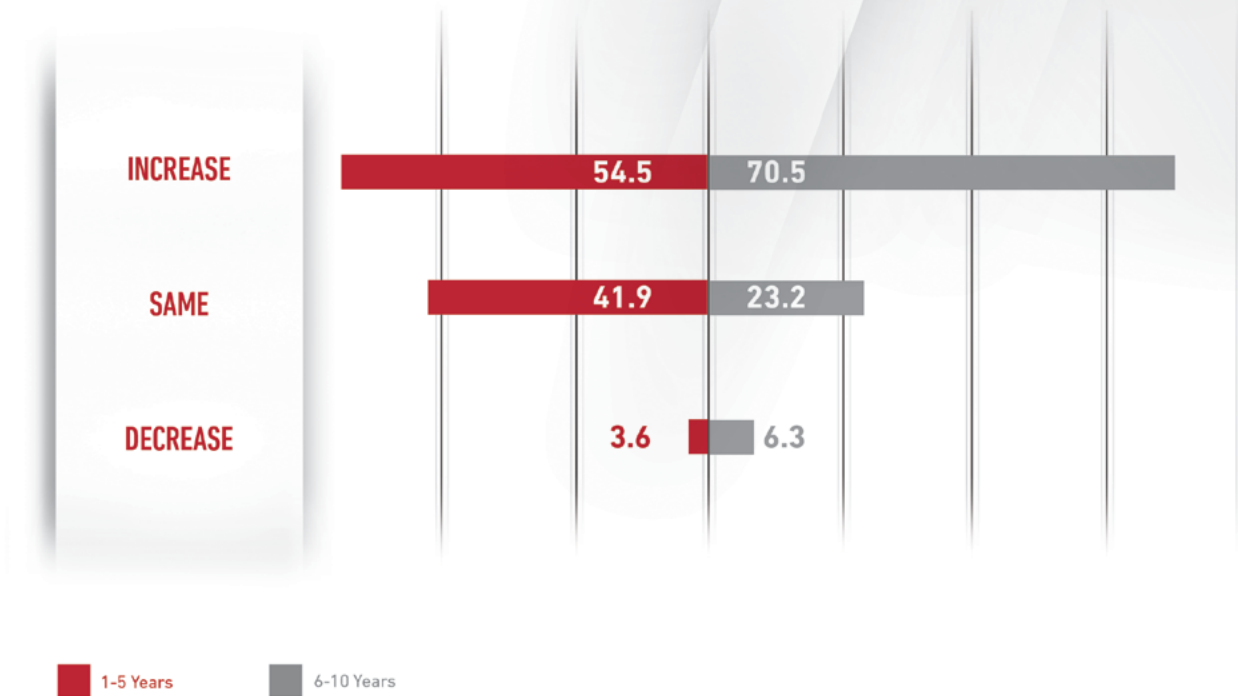
Figure 2-4. Business perceptions of future hiring needs across short-term, and long-term periods

In the context of entry-level positions, only about a quarter of businesses reported that 50% or more of these positions will be for entry-level employees. This suggests that while businesses expect to have a need to hire new staff, a large majority of this need will require labor with some level of previous experience.

When there is a need to fill entry-level positions, two-thirds of businesses reported difficulty identifying applicants with necessary skills for entry-level positions. Businesses also reported that these positions take time to fill, with three-quarters of businesses reporting time to fill entry-level positions was greater than 30 days (20% reported 3 months or more). These results would suggest that businesses would be expected to recruit labor outside of the local Pasadena or greater San Gabriel Valley. In fact, 60%[1] of businesses reported their company recruits outside the local area for qualified labor "all of the time" or "most of the time".

Since most responding businesses self-identified as information technology, we examined this group separately. Reported difficulty increased to three-quarters of businesses within this classification; reports of time to fill entry-level positions increased to 84%; and reports of recruiting outside the local area (all of the time or most of the time) were similar at 60%.

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[1] Participants were asked to respond on a five-point Likert scale ranging from "All of the time" to "Never". A total of six percent of businesses reported "Never".

Conclusions – Industry and Employment Trends

Business perceptions about future growth expectations are an important barometer for determining the potential need for skilled labor. This report shows that businesses around PCC have expectations for growth and forecast this growth to increase over time. Businesses are acutely aware that competition in their industry is the leading barrier to continued growth, with a strong need for skilled labor to fuel any future growth. This is further evidenced by the finding that businesses generally reported factors associated with growth as the leading reason for hiring new staff.

Businesses of all sizes reported consistent hiring for the first three-quarters of 2018 and most have expectations that this level will increase over time with many of the remaining businesses believing this will at least remain at current levels. However, a majority of the positions filled by businesses required some level of previous experience and expect this to continue with future labor needs.

The fact that labor wages were generally an unimportant factor as a barrier to growth combined with the outlook of positive growth, suggests that businesses may be willing to compete for qualified skilled labor. This is supported with findings that most businesses report difficulty identifying qualified applicants and that open positions take time to fill.

These results offer several suggestions for PCC:
- **Invest in programs that provide students with field experience to support the needs of area businesses**
- **Increase outreach to attract individuals currently employed in emerging fields, but lack certification or accreditation (i.e., those looking to transition into a more technical position, or those that are unable to advance further)**

Understanding the educational needs and requirements of businesses are key to developing programs that serve both students and businesses. In this section, businesses were asked to report on the relevant educational requirements to their businesses for entry-level positions, requirements, and preferences for previous experience and the perceptions of local city colleges in providing these educational programs.

Requirements for Entry-level Positions

Businesses were asked to think about which entry-level positions they hire for the most and report what the minimum educational requirements were for that position. Nearly 50% reported middle-skills requirements: certification or education beyond a high school diploma (or GED), but less than a four-year (e.g., bachelor's degree). The most commonly reported educational level within this group was an associate degree. The distribution of responses is shown in Figure 1.
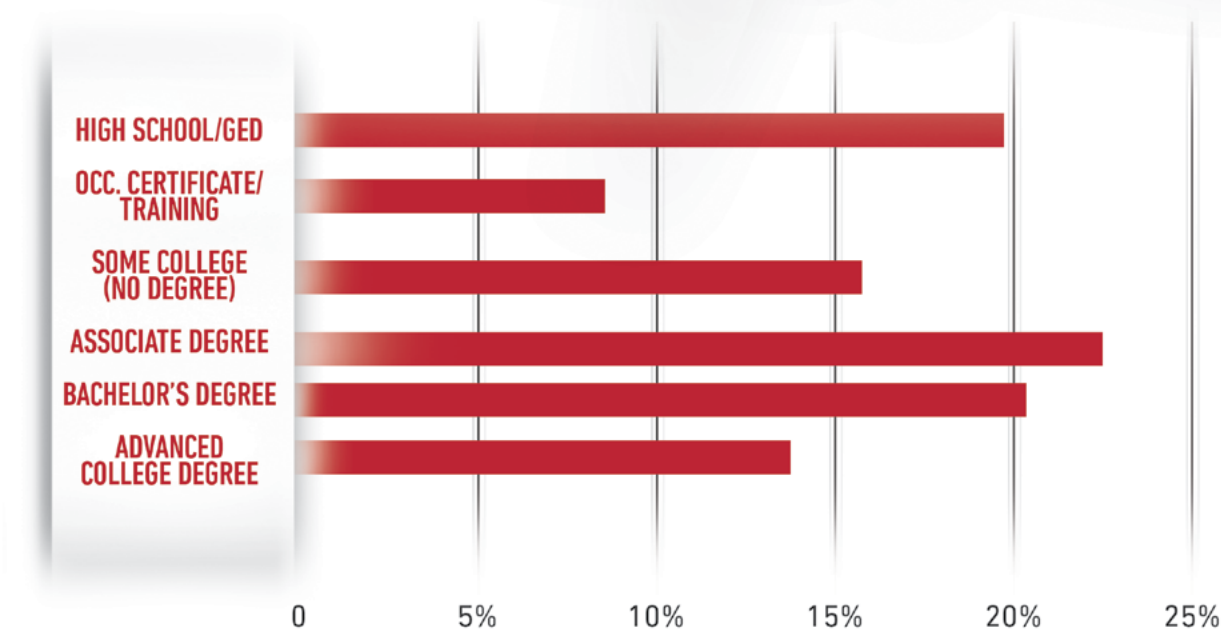
Figure 3-1. Distribution of educational requirements for entry-level positions

The lowest educational requirement (high school diploma or GED) was reported by 20% of responding businesses. A closer look reveals that businesses in the entertainment or sales industries accounted for one-half of these responses. Specifically within the sales industry, nearly 40% of these businesses reported this education level, while for the information technology sector, only 2% of businesses reported this bottom level of education.

For the highest educational requirement (bachelor's degree and advanced college degree), only 13% of responding businesses reported this requirement as minimum. On the other hand, this highest educational requirement was largely reported by businesses in the information technology sector with 40% of businesses in that sector, followed by over one-half of businesses in the health sector.

Additional detail was collected on why that level of education was the minimum requirement. Responses were collected in free-form comments with only 44 of the 112 responding business survey participants providing substantive responses. These were reviewed and grouped into thematic categories listed below.

CATEGORY	COUNT
Required standard or company policy	
• Company policy	4
• Standard for business industry	2
Demonstration of skills, experience, or proficiency	
• Ensures proficiency in communicating with others	8
• Shows potential for learning new skills	2
• Ensures basic skills in industry	14
• Certifies knowledge of regulations that apply to industry	2
• [Personnel] have more experience	4
Based on labor cost	
• Ability to pay less at this education level	6
Seeking highest qualified personnel	
• Desire for most qualified	2

The thematic category relating to skills, experience, or proficiency was the most frequent reason given by businesses. This was reported by two-thirds of businesses providing a substantive response as the reason for the minimum educational requirement. Additionally, nearly one-half of responses in this thematic category were for middle-skills education levels (above high school/GED, but less than bachelor's degree).

When business responses were examined across industry sectors to identify any patterns, only one pattern emerged. The thematic category relating to labor cost was completely clustered within the information technology business sector and middle-skills education levels. We interpret this as a positive finding. Higher-level education was most frequently reported by businesses in the information technology sector, however nearly half of respondents in this sector reported middle-skills education levels met educational requirements. Middle-skills education may offer advantages to both businesses and employees. **For businesses in this sector, training or specialized skills training is necessary and middle-skills education offers a labor pool that meets many of these needs at a cost lower than those with a four-year college degree (or higher). For prospective employees, middle-skills education offers specialized training in an advanced and emerging field without the need to take on the commitment or financial burden associated with a four-year college degree.**

Educational Requirements across Entry-level Positions

Educational requirements may not be the same for all entry-level positions. To assess findings reported across entry-level positions as representative of all entry-level positions, businesses were asked to determine what requirements differed. A large majority (82%) of businesses reported that the minimum educational requirements were not different across entry-level positions. However, of the few businesses reporting the requirements were different, slightly more than half (60%) reported the educational requirements were higher.

The high number of businesses reporting that educational requirements did not differ between entry-level positions suggests that our results appropriately represent the general requirements for entry-level positions.
However, a possible explanation for this observation is that many businesses may not consider positions that have higher

educational requirements to be "entry-level", or these positions may have previous experience requirements. Next, we look at the role of experience.

Entry-level Position Need and Preference for Previous Experience

Practical experience in a specialized field may be valued by businesses as it demonstrates that a prospective employee possesses key industry skills and may offer a reference point for their skill level and commitment. In fact, nearly two-thirds (65%) of businesses reported that previous experience is a requirement for entry-level positions. This increased slightly to 68% when examining the data by our largest business sector represented – information technology. While a middle-skills education provides skills and training required by local area businesses, previous experience is still highly valued.

To determine just how important previous experience is, businesses were asked what they preferred more: previous experience, but no certification/degree — or — certification/an associate's degree, but no experience. Just over half (55%) of businesses preferred previous experience over educational training.

When we look across both 'requirements for experience' and a 'preference for experience', we expect to see a high proportion preferring 'previous experience' when this is a requirement. However, we see that the preference for 'previous experience' remained high even among the small proportion where 'previous experience' was not an entry-level requirement. Figure 2 shows preferences by whether 'previous experience' is a business requirement.

Figure 3-2. Preference between accredited training and previous experience

The role of practical work experience in specialized fields presents a dichotomy to both businesses and students seeking entry into specialized fields. For businesses, prospective employees with previous experience may demand higher compensation and entry-level positions may be undesirable. Our findings show a clear preference for candidates with previous experience. For students, businesses may consider the lack of experience disqualifying, or offer positions to those with less formal training, but previous experience. This makes it challenging for students new to the field to gain the practical experience necessary to enter into the desired field. **The challenge for PCC is in not only educating students in new emerging fields, but also identifying opportunities for students to gain practical experience that will allow them to enter their desired fields.**

Perceptions of Local City Colleges and Availability of Employee Educational Benefits

Local area business perceptions of city college training or degree programs are important as they offer a general assessment of how well these programs meet business needs. Overall, more than three-quarters (78%) of businesses reported that the certification, training, or degree programs offered by local city colleges provide the skills necessary for entry-level positions. When we restrict the analysis to our largest business sector represented (information technology), business perception rises to 86%.

In the first section of this report, we offered the recommendation that PCC invest in outreach programs to those currently employed, but lacking certification or a degree. This was in response to the finding that most hiring that occurred in 2018 was not for entry-level positions. Employer programs that offer tuition benefits or assistance to employees would help this investment. More than half (55%) of businesses reported offering tuition reimbursement, or other employee education programs. This was only slightly higher for businesses self-identifying as information technology at 62%.

Conclusion – Education and Skill Requirements

The findings for educational requirements for entry-level positions show that businesses find value from middle-skills education (more than high school/GED, but less than a four-year degree). This education level was a reported requirement by half of businesses, with an associate degree as the most frequently reported requirement within this group. The value of education and skill requirements related to an associate degree that businesses find is two-fold. One, it provides a demonstration that prospective employees possess the skills, experience, or proficiency key to the business industry. Second, businesses (within information technology sector) are able to offer more competitive wages within this education level. **We concluded this was a benefit to students as well since many may be unable or unwilling to commit the time or take on the financial burden associated with pursuing a four-year degree program. This allows an entryway into emerging fields where students can gain experience and take advantage of tuition programs offered by just over a half of local businesses.**

Businesses showed a clear preference for previous experience, more so than accredited middle-skills education. This presents a clear challenge for businesses, students, and PCC. Businesses report difficulty in finding skilled labor (where previous experience is preferred); students completing accredited programs are challenged to bring previous industry experience; and local city colleges (i.e., PCC) are perceived as having strong programs with skills training applicable to local businesses, but need to find ways to help students gain practical experience.

We offer several recommendations based on the results that businesses value educational programs, but have a clear preference for previous experience:

- **Invest in promotional or outreach programs targeting businesses to increase perceptions for the value of educational programs (i.e., demonstrate that accredited training by experts in an industry field is an education with practical experience)**
- **Invest in programs that work with businesses to offer technical experience or practical field work as part of a program's curriculum that help students gain industry experience**

The previous sections reported a preference and practice by businesses in focusing on previous experience for entry-level positions. Recommendations centered on investments in programs that provide practical experience to students in middle-skills educational programs. In this section, we report on business participation and perception of job shadowing and internship programs.

Current Participation in Job Shadowing or Internship Programs

Businesses were asked whether they currently offered or participated in any student-based job shadowing or internship programs. These programs were defined as follows:

- Job shadowing is a process where students observe an employee while they perform their work duties at their place of employment to learn more about a particular job. Job shadowing may be limited in duration and is generally not paid.
- An internship is a program where a student or trainee works or performs the duties of a particular job in order to gain experience or training. Internships may be with or without pay.

Both job shadowing and internship programs were reported to be fairly common among responding businesses. As shown in Figure 1, 63% of businesses reported offering job shadowing and 60% reported offering internships. Looking at businesses that self-identify as information technology, this increases to 78% for both job shadowing and internships. Recall 45% of all businesses self-identified in this sector, though this may be a result of participants considering the nature of the business field rather than an industry classification. Because of this, we do not extend analysis to other business sectors with low participant counts, but present overall findings for these businesses.
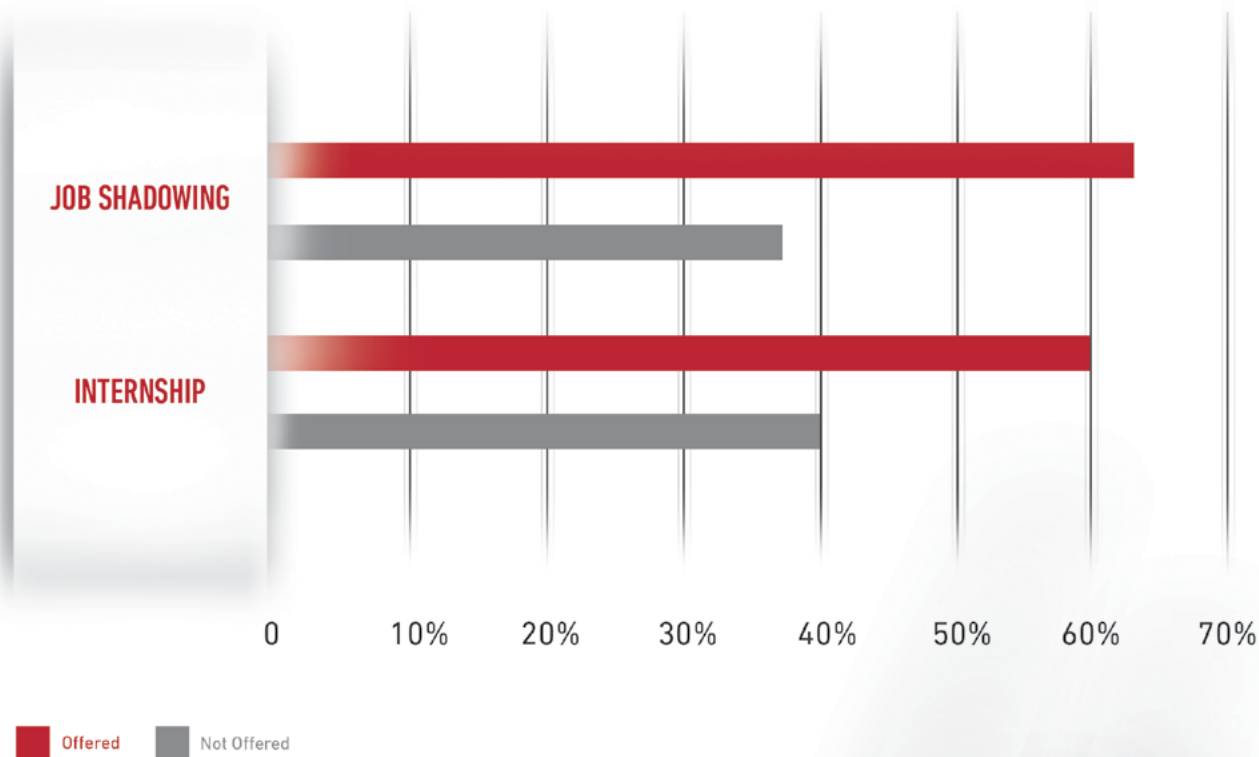

Figure 4-1. Distribution of businesses reporting offering job shadowing or internships

Very few businesses provided details on the school, agency, or organization they worked with for filling job shadowing or internship opportunities. When detail was provided, it was frequently vague, such as "community college," "colleges," or "universities". This may be due to the survey respondent not being the primary coordinator of these activities or working with multiple institutions.

For businesses that do not offer these opportunities, information was collected to determine why. Since a majority of businesses reported offering job shadowing or internship opportunities, the data on why these programs are not offered is sparse. The distribution of reasons selected are shown in Table 1.

REASON PROGRAM NOT OFFERED	JOB SHADOWING N=41	INTERNSHIP N=45
No clear benefit to company	41.5%	37.8%
Believe would cost too much	24.4%	24.4%
Uncertain how to implement	22.0%	13.3%
Lack of schools/programs to collaborate	19.5%	15.6%
Students would not benefit	9.8%	17.8%
Employment needs are met	24.4%	22.2%
Other	4.9%	6.7%

Table 4-1. Distribution of reasons job shadowing or internships are not offered (more than one option could be selected)

Overall, Table 1 shows that the most frequent reasons endorsed by businesses are those associated with business benefits or cost. About 40% feel there would be no benefit to the business of offering these programs. One reason for this is that businesses do not need a labor source for entry-level positions. This is evidenced by about a quarter of these businesses stating that current employment needs are met.

The perception that job shadowing would not benefit students was endorsed by just under 10% of businesses; the same perception was almost 20% for internships. This is an encouraging finding, since the large majority of businesses that do not offer these programs feel that the programs would still benefit students. **It is clear that the best way to increase business participation is to demonstrate how businesses would benefit.**

Perceived Business Benefits from Job Shadowing/Internships

Understanding how businesses perceive benefits associated and generally promoted with these programs is important for the planning of outreach or promotional efforts to businesses. Business ratings of importance to generally stated benefits for job shadowing programs and internship programs are shown in Tables 2 and 3. For both programs the ratings did not reveal any clear pattern in terms of importance.

BUSINESS BENEFITS FROM JOB SHADOWING	IMPORTANT	NEITHER	UNIMPORTANT
Students learn about a company culture	45.5%	30.4%	24.1%
Employee host can reflect/improve their work	46.4%	35.7%	17.8%
Promotion and improvement of a company's image	45.5%	39.3%	15.2%
Creating a base for future employment	52.6%	31.2%	15.2%
Opportunity to generate interest in a specific job or field	50.9%	31.3%	17.8%
Opportunity to influence educational programs specific to your interest	50.9%	31.3%	17.9%

* Ratings were reported on a six-point scale from 'Very Important' to 'Very Unimportant'. Percentage reported reflect collapsing top two, middle two and bottom two values.

Table 4-2. Distribution of rated importance of benefits to businesses associated with job shadowing

For job shadowing programs, about half of businesses generally felt all stated benefits were important. Benefits that directly affect the business or provided a level of control to businesses were rated slightly higher than those focused on students, employees, or abstract benefits (such as improving the image of the business). At the other end of the scale, only one factor was notably rated as unimportant by businesses. This was the benefit of a student's learning more about a business' culture – 24% of businesses rated this as unimportant.

BUSINESS BENEFITS FROM INTERNSHIPS	IMPORTANT	NEITHER	UNIMPORTANT
Potential source for new employees	43.8%	40.2%	16.1%
Opportunity to assess new candidates without formally hiring	51.8%	38.4%	9.8%
Potential to increase employee retention rate	50.9%	33.0%	16.0%
Access to low-cost labor	44.6%	41.1%	14.3%
Community/student support	46.5%	40.1%	13.4%
Opportunity to influence students early in their career	45.6%	40.1%	14.2%

* Ratings were reported on a six-point scale from 'Very Important' to 'Very Unimportant'. Percentage reported reflect collapsing top two, middle two and bottom two values.

Table 4-3. Distribution of rated importance of benefits to businesses associated with internships

Similar results were observed for internship programs. Almost half of businesses felt all stated benefits were important. Direct benefits to businesses, such as improving employee retention and assessing candidates without a formal commitment, were rated the highest. Few businesses selected ratings of unimportant. Of note however is the low percentage for the benefit of assessing new candidates without making a formal hiring commitment, with just under 10% of businesses indicating this is an unimportant benefit. The low proportion suggests that this benefit may provide the most value for internship programs to businesses.

Agreement with Reasons for Businesses to Not Offer Internships

As with perceived benefits, an assessment of general reasons businesses may not offer job shadow or internship programs can help to identify and develop programs for addressing these concerns. Businesses rated agreement of common reasons why job shadowing or internship programs may not be offered; these are shown in Tables 4 and 5.

For both programs, there are no strong patterns for rated agreement, but there are a few highlights worthy of additional discussion. There are also some inconsistencies which suggest that caution should be used interpreting these results. Businesses were asked to rate how much they agree or disagree with common reasons that businesses may not offer these programs. Therefore these are not reasons representative of participating businesses, but common business perceptions for why these programs may not be offered by businesses in general.

REASONS BUSINESSES MAY NOT OFFER JOB SHADOWING	AGREE	NEITHER	DISAGREE
Interferes with host employee's job or duties	32.2%	43.7%	24.1%
Would not increase student interest in this job or field	37.5%	38.4%	24.1%
Would be too burdensome to manage or monitor	41.1%	33.1%	25.9%
Host employees would not like having a student shadow	33.1%	42.9%	24.1%
Jobs at this company are too difficult to shadow	33.0%	33.0%	33.9%
Jobs at this company are too dangerous to shadow	34.8%	27.7%	37.5%
Employee's day would not be interesting to students	31.3%	36.6%	32.2%

* Ratings were reported on a six-point scale from 'Strongly Agree' to 'Strongly Disagree'. Percentage reported reflect collapsing top two, middle two and bottom two values.

Table 4-4. Distribution of rated agreement with reasons businesses may not offer job shadowing

For job shadowing programs, about one-third of businesses agreed with all statements for why job shadowing may not be offered. Another common theme emerges where statements directly affecting businesses received the highest agreement. The statement, 'job shadowing would be too burdensome to manage or monitor' elicited agreement from just over 40% of businesses.

An inconsistent observation is the 35% of businesses agreeing that job shadowing may not be offered because jobs at this company are too dangerous. Given the fact that almost one-half of participating businesses self-identified as information technology, this seems high. We posit that this is likely the result that some businesses were not focusing on "this company", but whether this was a relevant reason job shadowing would not be offered. This statement also shows the highest proportion of businesses disagreeing with this – a more consistent result.

REASONS BUSINESSES MAY NOT OFFER INTERNSHIPS	AGREE	NEITHER	DISAGREE
Interns require extra time or manpower to manage	41.9%	40.2%	17.8%
Interns lack the skills necessary for jobs in industry	39.3%	41.1%	19.6%
Jobs in this industry require too much training for interns	42.8%	33.0%	24.1%
Interns are unreliable	40.2%	37.5%	22.3%
Interns are too hard to find for your industry	38.4%	43.8%	17.8%
Jobs at this company are too dangerous for interns	33.0%	34.8%	32.2%

* Ratings were reported on a six-point scale from 'Strongly Agree' to 'Strongly Disagree'. Percentage reported reflect collapsing top two, middle two and bottom two values.

Table 4-5. Distribution of rated agreement with reasons businesses may not offer internships

For internship programs, levels of agreement were similar across all statements, with generally 40% of businesses providing ratings of agreement. While the differences are smaller, statements that directly affect businesses were again, albeit slightly, agreed on more. These included the statements that interns require more effort to manage and that interns would require too much training.

As with job shadowing, the statement that jobs would be too dangerous for interns had an unexpectedly high level of agreement, although lower than all other statements. Again, we feel this is due to inconsistent understanding of the reference for this statement (this company vs. more generally). This statement does show a much higher proportion of businesses in disagreement, which is a more consistent expectation.

Business Interest in Collaboration

A primary objective for surveying local area businesses is to determine the level of willingness for collaborating with local city colleges, offering PCC as an example. The context of this collaboration is job shadowing or internship programs. **Overall, about two-thirds of business respondents felt their company would have an interest in collaborating in both job shadowing (69%) or internship (64%) programs.** Restricting these results solely to business respondents self-identifying in the information technology sector, these rates increase to 88% for job shadowing and 80% for internship programs.

Contrasting this level of willingness with earlier observations (that only about half of businesses offered strong endorsement of perceived benefits and about one-third agree with reasons for not offering these programs), yields two conclusions.

- **While many businesses did not strongly endorse program benefits, the high level of willingness to collaborate suggests businesses find value here that may not have been captured by our statements.**
- **There is significant opportunity for PCC, suggesting outreach efforts would be positively received and valued by businesses.**

The employee positions for managing job shadowing or internship programs at businesses were collected, however, not all businesses provided a substantive response. The most frequent positions stated were senior positions, such as Vice President, Director, or manager positons, with "Manager" frequently provided. Positions within human resources were also frequently reported. For small businesses, owner or CEO positions were commonly offered. The distribution of reported positions is provided in Figure 2.
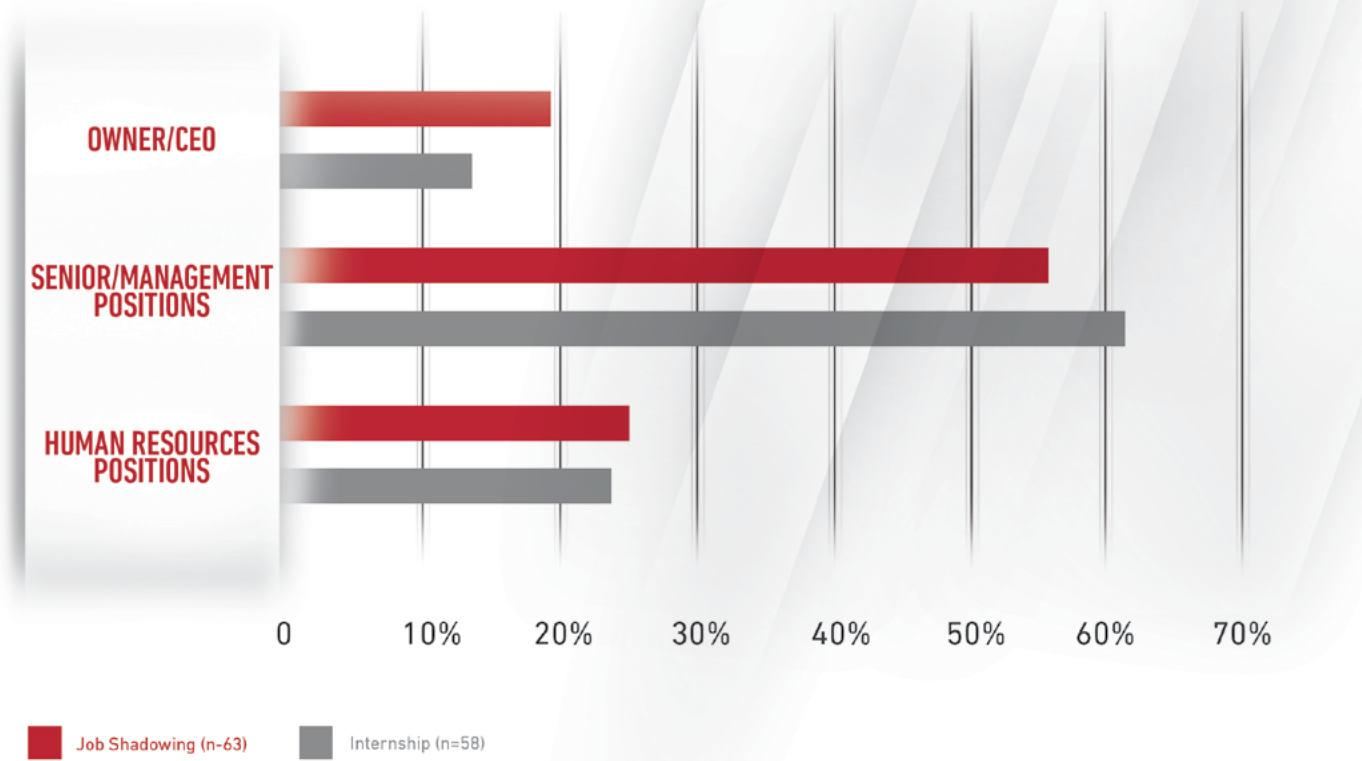
Figure 4-2. Distribution of job position types for managing job shadowing or internship programs

Finally, businesses were asked to rate the importance of common factors key to implementing collaborative job shadowing programs. This was collected for only job shadowing and not internship programs. Table 6 provides the results of participating business ratings.

FACTORS IMPORTANT TO COLLABORATING IN JOB SHADOWING	IMPORTANT	NEITHER	UNIMPORTANT
Communication between company and city college	46.5%	33.9%	19.6%
Quality of students participating in job shadowing	52.7%	32.2%	15.2%
Student who have interest in industry	56.8%	25.0%	15.2%
Company involvement in education or training program	47.3%	36.7%	16.0%
Relevance of education program to entry-level position	56.2%	32.1%	11.7%
Access to recruitment or job fairs (by businesses)	45.5%	37.5%	16.9%

*   Ratings were reported on a six-point scale from 'Very Important' to 'Very Unimportant'. Percentage reported reflect collapsing top two, middle two and bottom two values.

Table 4-6. Distribution of rated importance of factors important to businesses for collaborating in job shadowing programs

All factors were rated important by nearly one-half of businesses, though two factors received the highest ratings. Unlike ratings for program benefits (where specific direct benefits were most important), the most important factors in job shadowing were the relevance of the educational program and student interest in the business industry. **These results suggest that businesses are unwilling to invest time with students who know little about an industry or associated jobs. Rather, businesses are interested in students who have demonstrated interest in the industry and are already progressing through education for related positions.**

Conclusions – Job Shadowing and Internship Opportunities

A large amount of detail on company perceptions of job shadowing and internships was collected. However, the conclusions drawn from the information collected are clear and brief. Job shadowing and internship programs can offer many benefits to students, but for businesses, these benefits need to have value and benefit explained. These results show that these programs are currently in use by businesses, with approximately 60% of businesses reporting as such. When these programs were not offered, it was generally because the business did not see a clear benefit of offering them.

The importance of benefits that are clear and that directly affect a business were commonly noted. Benefits directed toward businesses were generally rated as more important for these programs. Additionally, reasons that negatively affected businesses (e.g. additional cost from management or training program participants) resulted in somewhat higher ratings of agreement.

Businesses reported a high level of willingness to collaborate with local city colleges. However, participating students must be high-quality, come from an education program relevant to the business, and demonstrate a strong interest in the industry or field.

These results offer several recommendations for PCC while considering implementing or expanding job shadow and internship programs.

- **Since companies have a high level of willingness to collaborate with local city colleges, successful programs from PCC must focus on the benefits to businesses to get buy-in.**
- **Promoting program benefits to companies must be combined with continuous monitoring of business satisfaction with these programs. This will help PCC identify and address business concerns early, increase the salience of benefits and perceived satisfaction of businesses, and show that business benefits are important to PCC.**
- **Student quality and interest in business industries are important factors to businesses which translates to the overarching messages to promote and head the current priority for PCC. However, messages would have greater salience and meaning if backed by empirical results. PCC should increase student follow-up efforts after certificate or degree program completion, to provide more concrete data on how PCC educational programs contribute to local area industries.**

5. PARTNERSHIPS AND PERCEPTION OF PCC

Awareness of the partnerships and perceptions of PCC are important for determining how familiar business are with PCC as an educational institution and how PCC is recognized as a potential business resource. This section reports on how businesses or key decision makers at participating businesses reported familiarity with PCC as well as their view of PCC as an educational institution. Additionally, information was collected on current collaborative activities. Businesses that are currently engaged with other training or professional development programs are expected to have the management infrastructure in place for working with external institutions.

Collaboration Separate from Job Shadowing or Internship

Businesses were first asked whether they are currently active in collaborative activities with colleges or training/skill development centers that are separate from job shadowing or internships. Over half of businesses (53%) reported these type of collaborative activities. This suggests that many businesses would be prepared and able to coordinate with other programs such as job shadowing or internships.

Businesses were requested to provide detail, such as the organization or agency name that the business uses for training or professional development. As occurred with previous free-form responses, very few substantive responses were provided (less than half of those reporting provided any text). A review indicated that many business respondents may have had difficulty separating programs or excluding job shadowing or internships. Many responses were identical to results reported for job shadowing and internships and were generally not descriptive (e.g., "colleges"). Alternatively, rather the incidence of respondent difficulty, these results may indicate there is a high degree of overlap with programs and that the same organizations or agencies offer a variety of program opportunities.

Familiarity with PCC

Businesses were roughly split in their familiarity (i.e. knowledge/awareness) with PCC. About 54% of businesses reported any familiarity, while 46% reported they were not familiar with PCC. Participants were able to indicate the level of familiarity or unfamiliarity with PCC on a six-point scale. More businesses reported high levels of knowledge of PCC compared to those with the least knowledge. 34% of business participants reported the highest level, compared to 26% for the lowest.
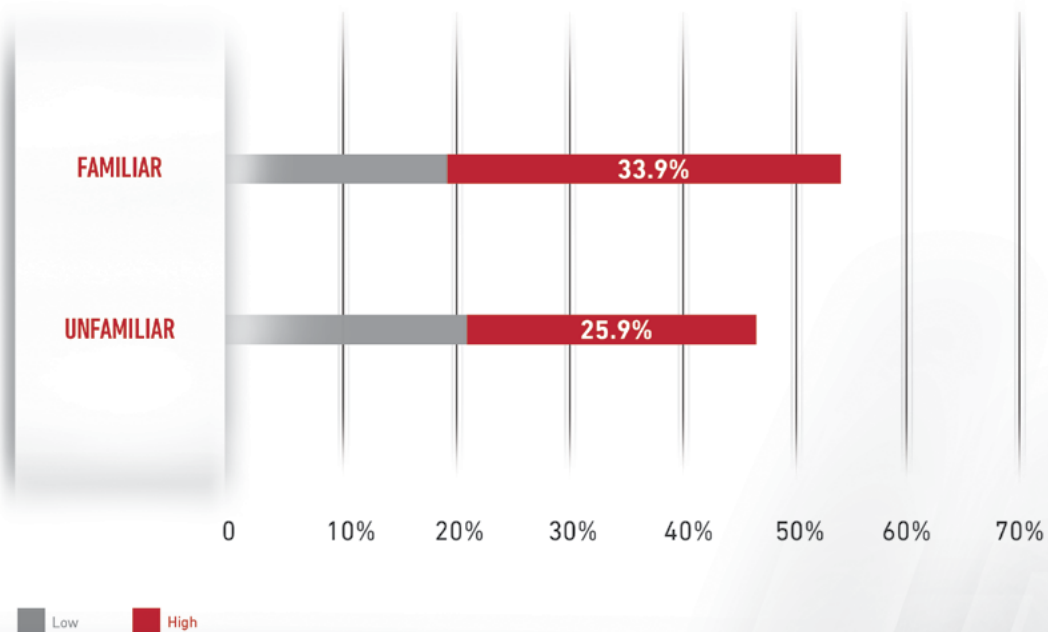

Figure 5-1. Distribution of reported familiarity degree with PCC

Of the sixty business participants reporting any familiarity with PCC, most reported a positive view of PCC as an educational institution. In total, about three-quarters (73%) rated PCC as very good or excellent, while 15% offered a rating of good, and 8% a fair or 'poor' rating. There were very few fair or poor ratings and a review within self-reported business industry did not show these ratings to cluster within any reported industry. Results indicate that fair or poor ratings are not associated with any specific industry education program.

Interest in Collaborating with PCC

Businesses were asked directly about how interested they felt their business would be in collaborating with PCC. The context for this was student focused, where in previous sections we noted that willingness to engage in job shadowing or internship programs was directly associated with business benefits. **A large majority of business participants reported some level of potential interest. A total of 82% reported some interest, while 70% reported higher levels of interest.** Only 18% of business participants reported their business would not be interested at all. As with ratings of PCC, ratings of no interest were not clustered within any industry sector. However, within business size, ratings of no interest were much more frequent with the smallest sized businesses (those with less than 10 employees). One-third of these businesses gave a rating of not interested and accounted for 60% of these ratings.

Programs Benefiting Businesses

Regardless of stated level of interest in collaborating with PCC, all business participants were asked what programs they felt their business would benefit from. Although collaborative interest is not directly related to program benefits, it may be influenced by other factors not measured. Table 1 shows what percent of businesses reported various programs as a benefit to their business.

PROGRAM	TOTAL PERCENT	BUSINESS SIZE (EMPLOYEES)		
		1-9	10-49	50-99
Internship programs	45.5%	38.9%	41.7%	51.4%
Job shadowing programs	46.4%	22.2%	47.2%	65.7%
Access to job fairs	42.9%	38.9%	41.7%	51.4%
Programs for current employees	47.3%	44.4%	38.9%	62.9%

Table 5-1. Distribution of programs that would benefit participating businesses

Overall, each listed program was listed as beneficial by nearly 50% of participating businesses. Businesses could select more than one program and all but three businesses selected at least one of the listed programs. The data was reviewed by self-reported industry and by willingness rating to collaborate with PCC. Businesses self-identifying in the information technology sector reported internship (52%) and job shadowing programs (56%) more than job fairs (46%) or employee programs (46%). Business with the highest level of interest in collaborating with PCC rated job fairs the lowest (42%) compared to other programs (internship: 61%, job shadowing: 61%, and current employee programs: 58%).

There were various different patterns by company size and again, the smallest companies had the least interest in collaborating with student programs. Smallest businesses more frequently rated current employee training programs as a benefit with very few selecting job shadowing. Job shadowing may be too burdensome for businesses of this size, while employee training programs may offer a direct benefit to the business. Alternatively, job shadowing was most selected as a benefit by medium and large businesses. Large businesses tended to identify more programs as a business benefit. This may reflect that large businesses are able to manage more programs due to their size and management structure.

Conclusion – Partnerships and Perception of PCC

Overall, PCC enjoys a highly positive view by local area businesses. However, nearly half of local area businesses lack knowledge or familiarity with PCC. This presents both a challenge and opportunity for PCC. Given the high positive views, there is an opportunity to increase business resources for students by increasing business awareness. The challenge for PCC will be in identifying approaches for connecting with businesses that are meaningful and encourage recognition of PCC as a middle-skills educational leader.

Generally, businesses were overwhelmingly interested in collaborating with PCC. This was only not the case for the smallest sized businesses (those with fewer than 10 employees). This is not unexpected since due to the company size, there may be little need or availability for resources to manage any collaborative activities. This means that engagement activities should focus on small (10 to 50 employees) and larger businesses, since they are likely to have greater ability to benefit from collaborative programs. Regarding programs of interest to businesses (in addition to job shadowing and internships), **PCC should invest in programs for those currently employed. This was the highest rated program type for the smallest sized businesses and received a high level of interest from large businesses as well.** This is an important observation as it suggests that many employers may be hiring people that require additional training or do not possess all the skills necessary for the industry. Businesses may find value in related programs since they increase the skill of their employees and do not require hiring and training new staff.

The observations on perceptions of PCC and willingness to engage in collaborative student job training activities offer a few recommendations.

- **To increase acceptance and participation in collaborative programs, PCC will need to extend outreach and promotion so that more businesses recognize PCC. Outreach should be business-focused and, for example, highlight student achievement in different industries or communicate how many PCC graduates work for local area businesses.**
  - Job fairs were the least reported benefit and tend to place a focus or expectation on businesses to interview or potentially hire staff they may not have a current need for. Another approach to getting businesses involved that shifts the focus from businesses, would be a business open-house during the educational term. Invite business leaders to tour and visit a PCC showcase where students can explain achievements and/or training skills.
- **PCC should think innovatively about job shadowing and internship programs. These programs have clear benefits to students, but the benefits need to be clear and direct to businesses as well. Businesses have a higher preference for programs that benefit current employees. An innovative approach to combining these needs is a hybrid mentor program where students (not currently employed in industry) shadow a fellow student (currently employed), where both are participating in the same training or educational program.** Such an approach may do more to engage both new student interest in the industry and engage program participants who are currently employed to participate and complete the educational or training program.

The commission of this study was a first step implemented by PCC in addressing the data-driven needs of California's Strong Workforce Program. The findings from this report offer a high-level overview from businesses in the local Pasadena and greater San Gabriel Valley. `The representation of industry sectors comes largely from self-reports of information technology, however this is not a traditional industry classification and was a classification based on emerging workforce areas. We infer that business respondents may have instead reported based on their work environment or job position. Within the state of California, technology jobs that are outside of what is considered the tech sector nearly equal those within the tech sector. While this report cannot make conclusions at an industry sector level, we believe that these findings present an accurate high-level overview of businesses of interest to PCC in the local area.

Throughout this report we have provided conclusions and general recommendations for PCC. This section summarizes these conclusions and brings together recommendations for next steps.

Participating businesses had an overwhelmingly positive attitude about the future for business growth. This was reflected in business projections of future hiring trends with a majority of businesses reporting expectations that hiring would increase. The future outlook may reflect current trends. More than half of businesses reported consistent hiring for the first three quarters of 2018 with hiring needs generally driven by growth. Much of the current and projected hiring by businesses is not focused on entry-level positions. Given the expectations for strong hiring, many businesses reported that finding qualified applicants was challenging. However, labor wages were generally not an important factor affecting growth. This may indicate the potential for wage increases as businesses compete for qualified labor.

Businesses value middle-skills education (more than high school/GED, but less than a four-year degree) and feel that programs offered by local city colleges provide the training and skills necessary for entry-level positions. The value derived by businesses demonstrates that prospective employees completing these programs possess basic communication skills and commitment, as well as advanced skills or proficiencies key for the industry. The value extends to students as an entryway into emerging fields without the burden associated with four-year degree programs. While education is valued, businesses have a clear opinion for minimum experience.

Job shadowing and internship programs offer many benefits to businesses and would help provide students with experience preferred by businesses. Many businesses reported activities with these types of programs. However, when a business did not engage in or offer programs, it was generally due to a lack of a clear benefit to the business.

For these types of programs to be accepted by businesses, they must present a clear and direct benefit and any cost or additional management needs must be minimized. Businesses expressed a general willingness to work with local city colleges in these programs, but have expectations that these programs be high-quality, connect with an education program relevant to the industry, and include students with a strong interest in the industry or field.

As an educational institution, PCC is held in high regard by local area businesses. This high view is tempered by the fact that many businesses lack familiarity with PCC. Interest in engaging in collaborative programs, such as job shadowing or internships, with PCC was overwhelmingly high, but not for the smallest businesses (those employing less than 10 employees). **While businesses are interested in job shadowing and internship type programs, businesses have a high interest in programs that will benefit and train current employees. This suggests that the current difficulty of identifying skilled labor may have led to hires who lacked some skills or training.**

Key points:
- Businesses have strong expectations for growth, driving hiring needs.
- Finding skilled labor is a key barrier to business growth.
- Entry-level positions are not a primary labor need for businesses.
- There are opportunities for wage growth for skilled applicants as businesses compete for labor.
- Middle-skills education programs, like those offered by PCC, are common requirements for entry-level positions.
- Middle-skills education is valued by businesses, but there is a strong preference for prior experience.
- Job shadowing or internship programs must offer clear and direct benefits to businesses.
- Job shadowing or internship programs must minimize cost or additional management resource requirements.
- For job shadowing or internship programs to be accepted, the education program must demonstrate relevance to the industry and students must show interest in the industry.
- Businesses have a high regard for PCC, but many businesses lack knowledge of or what PCC can offer.
- Interest in collaborative programs is high, though businesses have a high interest in programs for current employees.

Recommendations for PCC:
- Think beyond entry-level – in tight labor markets, those with certification or accreditation will be able to compete for mid-level or higher positions.
- Develop outreach programs targeting businesses to highlight and increase the perceived value of education over experience. Business-focused programs are student-focused programs. This outreach will show students PCC is tuned into the needs of businesses and increase business familiarity with the institution.
- Create non-committal opportunities for businesses to view student achievements. Events like job fairs are generally student-focused and place expectations on businesses to interview students. A program where burden is placed on students to demonstrate course work and business visitors have freedom to tour different subject areas should be explored. This will show businesses that students are gaining practical skills and experiences and that PCC is a leader in providing training for emerging industries. Likewise, this will show students that PCC is connected to and involved with key industry opportunities.
- Invest in and develop programs to provide students with practical experience such as job shadowing or internship programs.
- While businesses reported a high level of willingness to engage in these programs, successful programs must focus on presenting tangible and clear benefits to businesses.
- Not all students will be good candidates for job shadowing or internships. While businesses will reap many tangible and intangible benefits, these programs will incur a cost or the use of management resources. PCC must ensure student commitment and interest so businesses have positive experiences with these programs.
- Increase outreach and programs to those currently employed or those lacking certification/accredited training to transition to more technical positions.
- Innovate – businesses have an interest in programs geared toward students, but may prefer programs that focus on current employees. Investigate the potential of hybrid programs that pair employed students with students lacking experience or who are new to the field. This may increase engagement and satisfaction of both student groups and businesses.