

Educated Workforce: The Lifeblood of Idaho Business

The logo for Idaho Business for Education (IBE) features the letters 'IBE' in a large, bold, black, hand-drawn font. A blue horizontal line is drawn beneath the letters.

Idaho Business
for Education

IDAHO BUSINESS FOR
EDUCATION (IBE) REPORT

May 2014

TABLE OF CONTENTS

Table of Contents.....	1
About Idaho Business for Education	3
Acknowledgments	3
Why Conduct a Study?.....	4
How the Study was Conducted	5
Results at a Glance.....	6
Key Finding	7
Top Degree Areas in Highest Demand.....	8
Regional Results executive summary	9
Conclusions.....	10
Policy Recommendations and Next Steps	12
Other Economic and Societal Benefits to reaching the 60 percent goal.....	14
References Cited.....	17
Appendix	18
Exhibit 1: Mix of Industries surveyed and percentage of response.....	19
Exhibit 2: Estimate of the Percentage of Employees Based on the Highest Level of Educational Attainment	20
Exhibit 3: Level of educational attainment of current employees	21
Exhibit 4: Level of educational attainment organizations need to hire in the next year	22
Exhibit 5: Level of educational attainment organizations need to hire in 5+ years	23
Exhibit 6: Occupations most needed now and in 5 years.....	24
Exhibit 7: Distribution of Positions within Occupation, by the Minimum Level of Education Required.....	25
Exhibit 8: Percentage of Positions that require a Bachelor’s degree or higher, by occupation.....	26
Exhibit 9: Top Ten Areas that are Most Difficult to Find Qualified Applicants.....	27
Exhibit 10: Distribution of Employer Assessment of the Difficulty Finding Potential Employees, by Level of Educational Attainment	28
Exhibit 11: Top Degree Areas Emerging over the Next 5 Years	29
Exhibit 12: Employers’ level of satisfaction with newly graduated employees, by school type.....	30
Exhibit 13: Estimate of the percentage of employees needed in the future, 5+ years from now, by highest level of educational attainment and region	31
Exhibit 14: Top five degree areas emerging in the next five years, by region.....	32
Exhibit 15: Current education level of Idaho’s 25-34 year olds (206,220 total)	33

Exhibit 16: Recovery Job Growth and Education Requirements Through 2020 A Georgetown University study, June 201334

Exhibit 17: To what extent will demographic changes help Idaho reach its educational attainment goals for 2020?.....35

Exhibit 18: Partners who distributed survey for IBE36

Exhibit 19: The Economic Impact of Postsecondary Education on the Economic and Social Well-being of American Society, Education Policy Institute, May 2005.37

Exhibit 20: “Rigor Redefined: The Seven Survival Skills for Careers, College and Citizenship,” By Tony Wagner,.....38

ABOUT IDAHO BUSINESS FOR EDUCATION

IBE is a group of 80 businesses from across Idaho working to transform the state's education system to create a 21st Century workforce. A highly educated and skilled workforce can help Idaho build a strong business climate and a prosperous economy. For more information about IBE visit www.idahobe.org

ACKNOWLEDGMENTS

Thanks to Kathy Hagler of Hagler and Associates which conducted the research for this report and to ECONorthwest for assisting with the data analysis and provided several of the charts used in this report.

WHY CONDUCT A STUDY?

Two factors converged prompting Idaho Business for Education to conduct a study of what jobs our state's employers will need over the next five years and the level of education those jobs will demand.

The first factor was a 2010 study by Georgetown University that showed 60 percent of Idaho's jobs would require a post-secondary credential by 2018. Based in part on that study the Idaho State Board of Education adopted a goal of having 60 percent of Idaho's 25-34 year olds hold a post-secondary credential by 2020. That credential could be a workforce-ready certificate, an associate degree, bachelor's degree or higher. (Carnevale, Smith and Strohl 2010) (See Exhibit 16)

The 60 percent goal has since been embraced by the Governor, Legislature, State Department of Education and nearly every education stakeholder group in the state. It has also become the over-arching goal of Idaho Business for Education.

The second factor arose out of a meeting IBE leaders had with the presidents of Idaho's public universities and colleges. IBE wanted the presidents to explore ways to better align their curricula and degree programs with the needs of Idaho's employers. The presidents asked a good question: What kind of jobs will be in greatest demand over the next few years and what level of education and kinds of degrees will those jobs require?

To answer that question, IBE promised to conduct a workforce needs study of Idaho employers and report back to them. Furthermore, IBE decided that such a survey could test the relevance of the Georgetown study and the validity of the State Board of Education's 60 percent goal.

These questions are important for another reason: Right now only 41 percent of Idahoans have a post-secondary degree or credential. Fifty-nine percent of Idahoans have only some college, a high school degree or less. (See Exhibit 15) If the 60 percent goal is valid, then Idaho faces at least a 19 percent gap between the educated workforce it has and the one it will need by 2018.

The good news is a recent study by ECONorthwest, conducted for IBE, determined that we can close that gap by half because the current cohort of students in the targeted age group are more highly educated than the previous group of 25-34 year olds. But the study also said policy changes were still needed to hit the 60 percent goal. (See Exhibit 17)

Still, there are other signs that we might be farther from our goal than earlier thought. That's because Georgetown University updated its jobs study in June 2013 and now estimates that 68 percent of the jobs in Idaho by 2018 will require a post-secondary credential. (See Exhibit 16) If that's the case, Idaho isn't looking at a 19 percent education-jobs gap in its workforce, but a 27 percent gap.

An educated and skilled workforce is the lifeblood of Idaho business just as water is the lifeblood of its farmers. If an "education-jobs gap" exists, it will be very difficult for Idaho employers to find the educated workers they need. That could cause many companies to stagnate or leave the state to find qualified workers. It means that Idaho will have greater difficulty attracting new businesses that need highly educated workers.

In short, nothing less than Idaho's economic future and quality of life are at stake. That's why Idaho Business for Education conducted this important and timely report.

HOW THE STUDY WAS CONDUCTED

IBE conducted the on-line survey between May 2013 and October 2013. Nineteen business organizations assisted us by sending the survey to their members. (See Exhibit 18) In all, 466 Idaho business leaders responded. Most of them were presidents, chief executive officers or senior managers. IBE broke the results down into four regions. Here is the percentage and number of respondents from each region:

Regions	# of Respondents	% of Total
North Idaho	96	21.00%
Southwest Idaho	213	46.50%
South Central Idaho	52	11.40%
Eastern Idaho	97	21.20%

There were 17 questions in the survey. For our analyses that pertained to employees, as opposed to the surveyed organizations themselves, we weighted responses according to the number of employees in an organization. For the 37 companies reporting more than 500 employees we assigned a weight of 5,000 to take into account the size of some of the state's largest employers.

It is important to note that the IBE survey only covered private sector jobs and not government, education or non-profit jobs.

RESULTS AT A GLANCE

- The study confirms the Georgetown University study that at least 60 percent of the jobs by 2020 will require post-secondary credentials
- The State Board of Education's goal of having 60 percent of Idaho's 25-34 year olds hold a post-secondary credential by 2020 is valid and may even be low
- Idaho employers say 61 percent of the jobs by 2018 will require a post-secondary credential – either a workforce-ready certificate, a two-year associate's degree, a bachelor's degree or higher (See Exhibit 2)
- 43 percent of the jobs will require a bachelor's degree or higher (Exhibit 2)
- Only 22 percent of the jobs will require a high school degree or less (Exhibit 2)
- Five degree areas that will be in greatest demand by 2018: Computer Science/Technology; Business and Economics; Engineering; Health Science; and Communications (See Exhibit 11)
- Jobs that require a Bachelor's degree or higher will be the most difficult to fill. The easiest to fill will be jobs requiring a high school degree or less (See Exhibit 10)
- Jobs employers find the greatest difficulty getting qualified applicants for are: Computer software; Sales and Marketing; Healthcare; General Management; Computer hardware; Financial management; Office and Administrative; Project Management; and Business and Financial (See Exhibit 9)
- The job that will require the least education and will be in great demand is Office and Administrative Support (See Exhibit 7)
- Jobs that will require least education – food preparation and serving related jobs. (See Exhibit 7)
- Employers consider the following four skills "very important" for new hires: Able to perform with integrity; contribute to a team; acquire knowledge; and effectively communicate orally

KEY FINDING

The following data shows the percentage of jobs that will be available in 2018 by education level. As you can see, 61 percent of the jobs in four years will require some post-secondary credential – either a workforce-ready certificate, a two-year associate’s degree, a four-year bachelor’s degree or higher.

Only 22 percent of the jobs will require a high school degree or less. Right now 59 percent of Idahoans have only some college, a high school degree or less. (See Exhibit 15) Unless more workers obtain a post-secondary education, we will have too many people competing for too few jobs at the lower end of the job market. Not only will this mean that Idaho won’t have people to fill jobs that require more education, but this surplus of less educated workers will continue to put downward pressure on wages in Idaho.

Educational Attainment	% of Total of Total Jobs Available
No high school degree	2.50%
High School degree/GED	19.30%
Vocational training	10.30%
Some college, no degree	6.60%
Certification	6.70%
Associate’s degree	12.00%
Bachelor’s degree	29.70%
Advanced degree	12.90%

TOP DEGREE AREAS IN HIGHEST DEMAND

The IBE survey shows that computer science and technology jobs will be in the greatest demand in four years, followed by Business and Economics. Engineering, Health Sciences and Communications round out the top five degree areas, according to Idaho employers. (See Exhibit 11)

This data tracks closely the Georgetown University study which shows that between 2010 and 2020 STEM-related jobs will grow 20 percent and Science and Technical jobs will grow 28 percent. Finance and Insurance jobs will grow 37 percent. Healthcare and Social Assistance jobs will grow 35 percent.

Management and professional office and sales and office support jobs will grow 21 and 23 percent respectively. (Exhibit 16)

REGIONAL RESULTS EXECUTIVE SUMMARY

Some interesting regional variations exist between North Idaho, Southwest Idaho, South Central Idaho and Eastern Idaho:

- When the results are weighted by number of employees the survey found substantial variations by region in the percentage of employees needed by 2018 with post-secondary credentials. That variation ranged from 52 percent in South Central Idaho to 77 percent in eastern Idaho (Exhibit 13)
- A regional variation also existed in the percentage of employees needed with bachelor's degrees or advanced degrees. That variation ranged from 31 percent in North Idaho to 50 percent in Southwest Idaho (Exhibit 13)
- Across all regions the demand for "Computer Science/Technology" and "Business and Economics" degrees top the list
- "Health Science" is a top five degree area for both Southwest Idaho and Eastern Idaho

CONCLUSIONS

State policymakers wisely set a goal of having 60 percent of the state's 25-34 year olds hold a post-secondary credential by 2020. In fact, the goal may be low considering employers told IBE they will need 61 percent by the year 2018. Giving additional credence to this conclusion, Georgetown University updated its jobs study in June 2013 and announced that 68 percent of Idaho's jobs by 2020 will require a post-secondary credential. This represented an 8 point increase from its previous study. (Exhibit 16)

According to Georgetown, Idaho is one of 27 states that will require a workforce of 60 percent or greater with post-secondary credentials.

The IBE study shows that by 2018, 43 percent of the jobs will require a bachelor's degree or higher which is significantly higher than the 34 percent identified by the State Board of Education. Still, the overall percentage of people who will need a post-secondary credential is consistent in the IBE study and the State Board goal.

The bottom line is: Idaho will need more educated workers – not fewer – in the years ahead.

The IBE study also shows that education attainment will increasingly matter when it comes to Idahoans finding employment. Only 22 percent of the jobs will require a high school degree or less. Yet right now 35 percent of Idahoans fit that description, meaning there will be more people seeking these jobs in five years than available positions. (Exhibit 15)

The survey findings point to the urgency of putting policies in place that will get more Idaho high school graduates to go on and successfully complete their post-secondary education, especially bachelor degrees. Candidates with a bachelor's degree will be in greatest demand by 2018 and will be the hardest to find.

That said, it is also important for Idahoans to graduate with a variety of credentials – work-ready certificates, associate degrees, bachelor degrees and higher – and the right mix of degrees. That's because job candidates in certain professions will be in greater demand than others.

Candidates with "Computer Science/Technology" and "Business and Economics" degrees will be in the greatest demand by far in all regions of the state. The institutions of higher education should support these degree areas to ensure that we have an ample supply of workers.

Certain so-called "soft skills" are in great demand by employers. Employers want workers who can work as a team, follow through on their commitments, develop knowledge and communicate with other people. Idaho's education system – K through higher education - is uniquely qualified to teach these life-long learning skills to our state's students.

This tracks with the Georgetown study which found that employers want the following five skills the most from their workers: judgment; decision-making, communications, analysis and administrative skills. (Exhibit 16)

It also echoes a study by Harvard professor Tony Wagner who identified what he called “Seven Survival Skills for “Careers, College and Citizenship.” (Wagner 2008)

POLICY RECOMMENDATIONS AND NEXT STEPS

- Idaho should implement all of the Governor’s Task Force recommendations because they provide a blueprint for transforming the state’s education system and improving student outcomes.
- IBE, the State Board of Education and other key stakeholders should collaborate on a “gap analysis” to see how the jobs that will be in greatest demand in five years align with the current mix of degrees that the institutions of higher education are awarding.
- It is clear that STEM-related jobs will be in highest demand over the next few years. Idaho’s higher education institutions should look at ways to increase the number of students graduating with credentials in computer science and other technology-related fields
- Idaho must determine why more high school graduates don’t go on to post-secondary education. The state has the lowest go-on rate in the country. Only 46 percent of Idaho’s high school graduates in 2013 enrolled in college the following fall.
- Once we know why students don’t go on, the state should adopt policies that encourage more high school graduates to seek a post-secondary credential.
- Idaho must focus more attention on the first leg of the education continuum by making sure students get a good start on their educational journey. This should include a state-supported early childhood program for any parent who wants it and an effective program to identify and help students in kindergarten through 3rd Grade who are struggling to do grade level reading and math.
- Part of the post-secondary go-on solution should include adequate funding for high school students who want to take dual credit classes. This will jumpstart students’ entry into post-secondary education and lead to increased graduation rates.
- Idaho should successfully implement the Idaho Core Standards. These standards raise expectations for what students learn in math and English and better prepare them for the rigors of a post-secondary education. The Core Standards should also help reduce the need for remediation in math and English for first-year college students.
- Institutions of higher education should focus maximum attention on steps to reduce the drop-out rate and help students successfully attain their post-secondary credential.

- “College and Career” guidance efforts should start early in public schools and be consistently applied as students advance in high school. This preparation should include a “strengths assessment” for all incoming high school students that educators can use to advise students on curricula that will prepare them for post-secondary education and careers that reflect their individual strengths and talents.
- Idaho’s high schools and institutions of higher learning should align their college and career guidance efforts so students make a seamless transition from 12th grade to post-secondary education. This effort can launch students on the best academic course and assist in retention and successful matriculation from college or a certificate program.

OTHER ECONOMIC AND SOCIETAL BENEFITS TO REACHING THE 60 PERCENT GOAL

Studies show that workers with higher education attainment are more likely to be employed, have a better chance of getting a new job if they become unemployed, earn considerably more over their lifetimes, pay more in taxes to support education and other government services and put less stress on social programs.

Workers with a bachelor's degree in the late 1970s earned 55 percent more than adults with a high school degree, according to a 2012 Census Bureau report. By 1990 that difference had grown to 75 percent and by 2012 workers with a bachelor's degree earned 85 percent more than workers with a high school diploma.

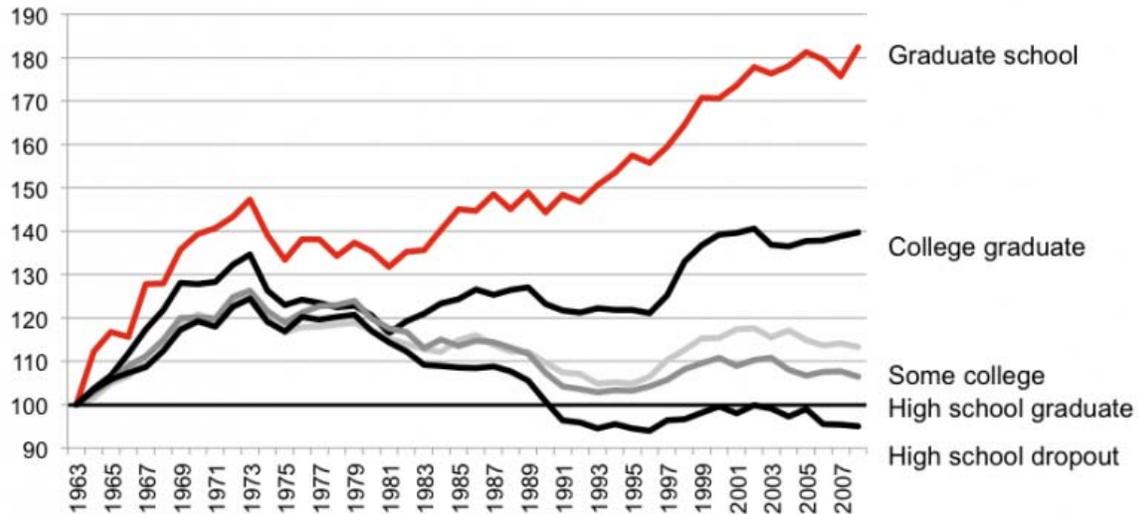
Data released by the Bureau of Labor Statistics in March 2014 said that workers who had attained the highest level of education had the lowest unemployment rate and also made the most money.

For example, the unemployment rate for workers aged 25 and older with a bachelor's degree was 4.0 percent to 7.5 percent for workers with a high school diploma and 11 percent among those who dropped out of high school.

Workers with a bachelor's degree earned a median weekly salary of \$1,108 compared to the \$651 a week for workers with a high school diploma and the \$472 earned by workers who did not finish high school.

Here is another way to look at this trend. You can see from the following chart that the wages of workers with a post-secondary degree and those with a high school degree or less were fairly close between 1963 and 1982. But since 1982 when the United States started the transition from an industrial economy to a knowledge economy the wage difference has widened. In fact, workers with no high school degree have less earning power adjusted for inflation than they did 50 years ago.

Changes in wages for full-time, full-year male U.S. workers 1963-2008

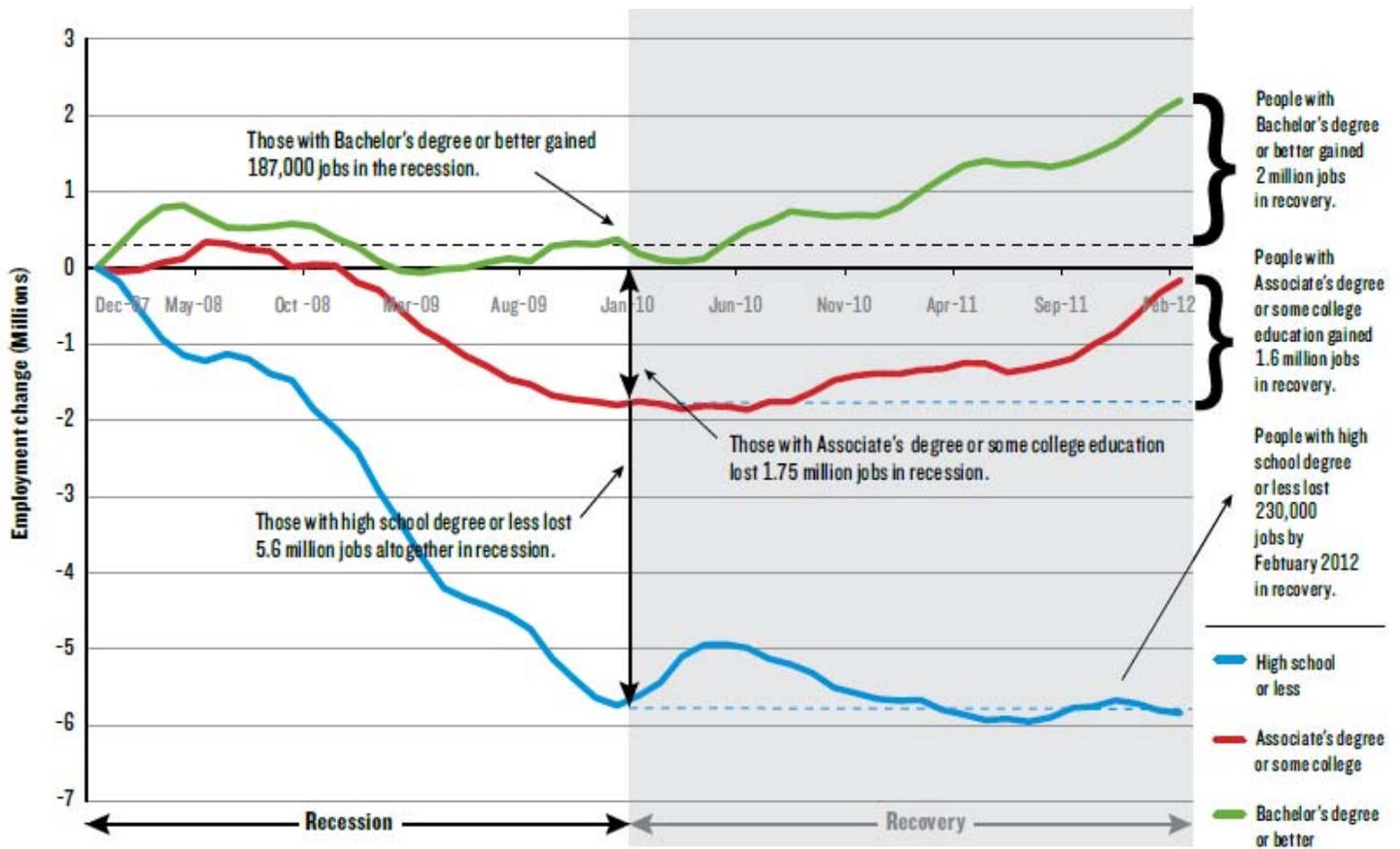


Source: Acemoglu and Autor (MIT), *Skills, Tasks and Technologies: Implications for Employment and Earnings* (2010).

This is also reflected in a “jobs gap” between more educated and less educated workers. The following graphic shows that during and since the end of the Great Recession there have been a large increase in jobs for workers with advanced and four-year college degrees. In fact, workers with college degrees actually gained 186,000 jobs during the Great Recession and 2 million jobs since it ended. (See chart below)

The nation lost 1.7 million jobs for workers with an associate degree or some college during the Recession, but has made back most of those jobs since it ended. But the country lost 5.6 million jobs for workers with only a high school diploma or less during the Great Recession and another 230,000 jobs since it ended.

Employment Changes from 2007-2012 by Educational Attainment



Source: Carnevale, Cheah and Jayasundera (Georgetown University): Weathering the Economic Storm (2012)

These charts graphically show why there is an economic imperative for Idaho to reach the 60 percent goal by 2020. Idaho has entered the knowledge economy. Once solidly blue collar jobs such as driving a semi-truck, working in a food processing plant, and working in a body shop now all require computer skills. Additionally, technology and automation continue to reduce the number of blue collar jobs. This transition from an industrial to a knowledge economy will accelerate in the years ahead, making it more important for Idaho students to go on beyond high school and obtain some post-secondary credential that will prepare them for the workforce.

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APPENDIX

EXHIBIT 1: MIX OF INDUSTRIES SURVEYED AND PERCENTAGE OF RESPONSE

Industries of surveyed organizations	Percent	Total Establishments in Idaho by NAICS Industry Sectors	Percent
Finance	12.2%	Construction	13.7%
Health Science/Medical	8.0%	Retail trade	13.7%
Manufacturing	7.4%	Health care and social assistance	11.2%
Education and Training	5.3%	Professional, scientific, and technical services	9.9%
Information Technology	4.9%	Accommodation and food services	8.3%
Marketing	4.9%	Other services (except public administration)	7.6%
Human Services/Social Work	4.4%	Finance and insurance	6.5%
Government and Public Administration	4.2%	Administrative and support and waste management and remediation services	5.0%
Agriculture, Food, and Natural Resources	4.0%	Wholesale trade	4.7%
Architecture and Construction	3.8%	Real estate and rental and leasing	4.6%
Hospitality and Tourism	3.4%	Manufacturing	4.1%
Transportation, Distribution, and Logistics	3.2%	Transportation and warehousing	3.9%
Science, Technology, Engineering, and Mathematics	3.0%	Arts, entertainment, and recreation	1.7%
Business Management and Administration	2.7%	Information	1.5%
Law, Public Safety, Corrections, and Security	2.5%	Agriculture, forestry, fishing and hunting	1.0%
Arts, AV Technology and Communication	1.7%	Educational services	1.0%
Other	24.5%	Management of companies and enterprises	0.5%
		Utilities	0.5%
		Mining, quarrying, and oil and gas extraction	0.3%
		Industries not classified	0.2%

EXHIBIT 2: ESTIMATE OF THE PERCENTAGE OF EMPLOYEES BASED ON THE HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT

Level of Education	Current employees	Need to hire in the next year	Needed 5+ years from now
No high school degree	2.4	2.9	2.5
High school degree/GED equivalent	27.9	22.6	19.3
Vocational training	7.5	9.4	10.3
Certification	4.9	3.9	6.7
Some college, no degree	9.9	7.1	6.7
Associate's degree	11.2	11.5	12.0
Bachelor's degree	23.9	28.4	29.7
Advanced degree	12.2	14.2	12.9

Note: Responses are weighted by the number of employees in the organization.

EXHIBIT 3: LEVEL OF EDUCATIONAL ATTAINMENT OF CURRENT EMPLOYEES

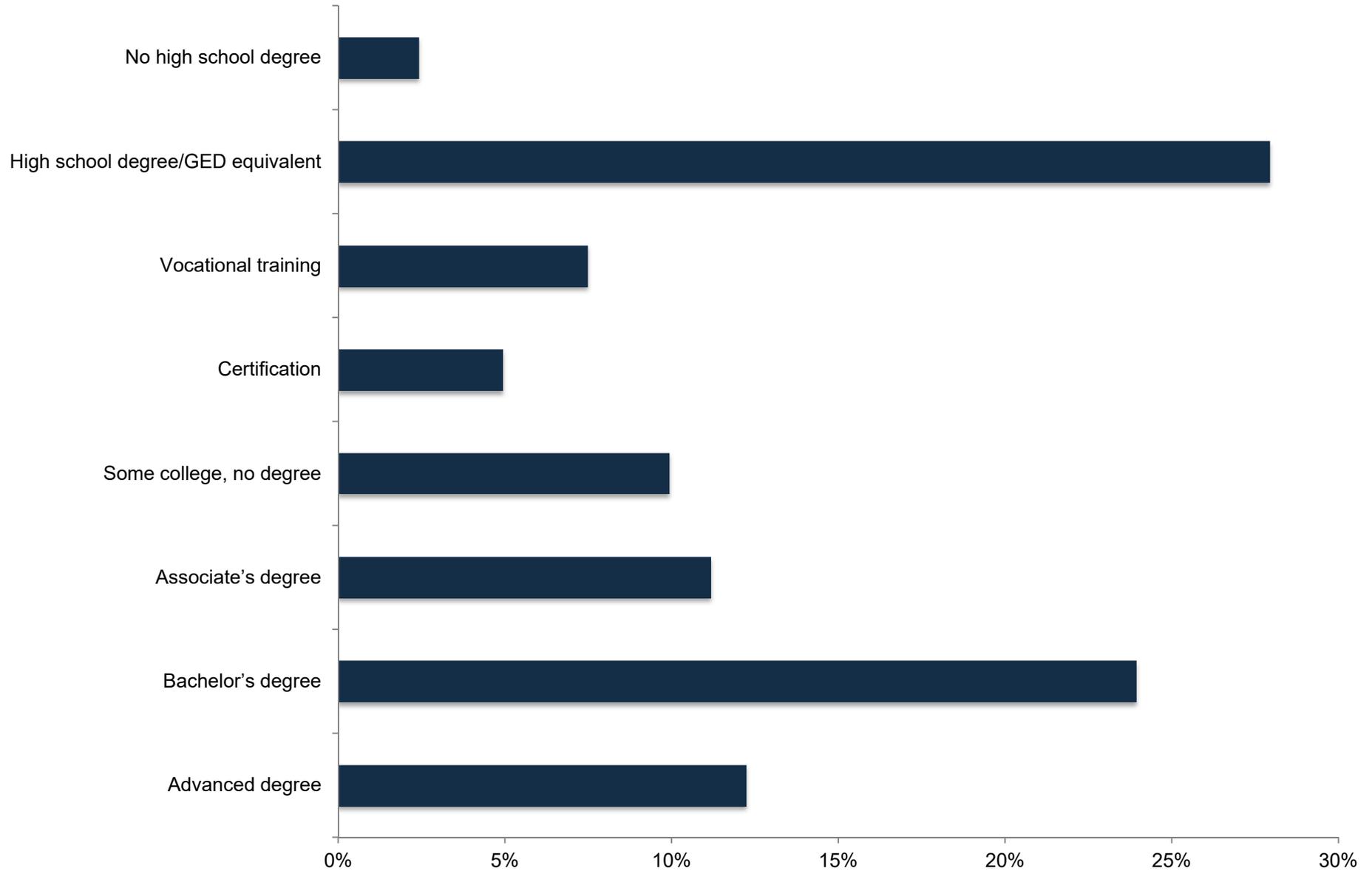


EXHIBIT 4: LEVEL OF EDUCATIONAL ATTAINMENT ORGANIZATIONS NEED TO HIRE IN THE NEXT YEAR

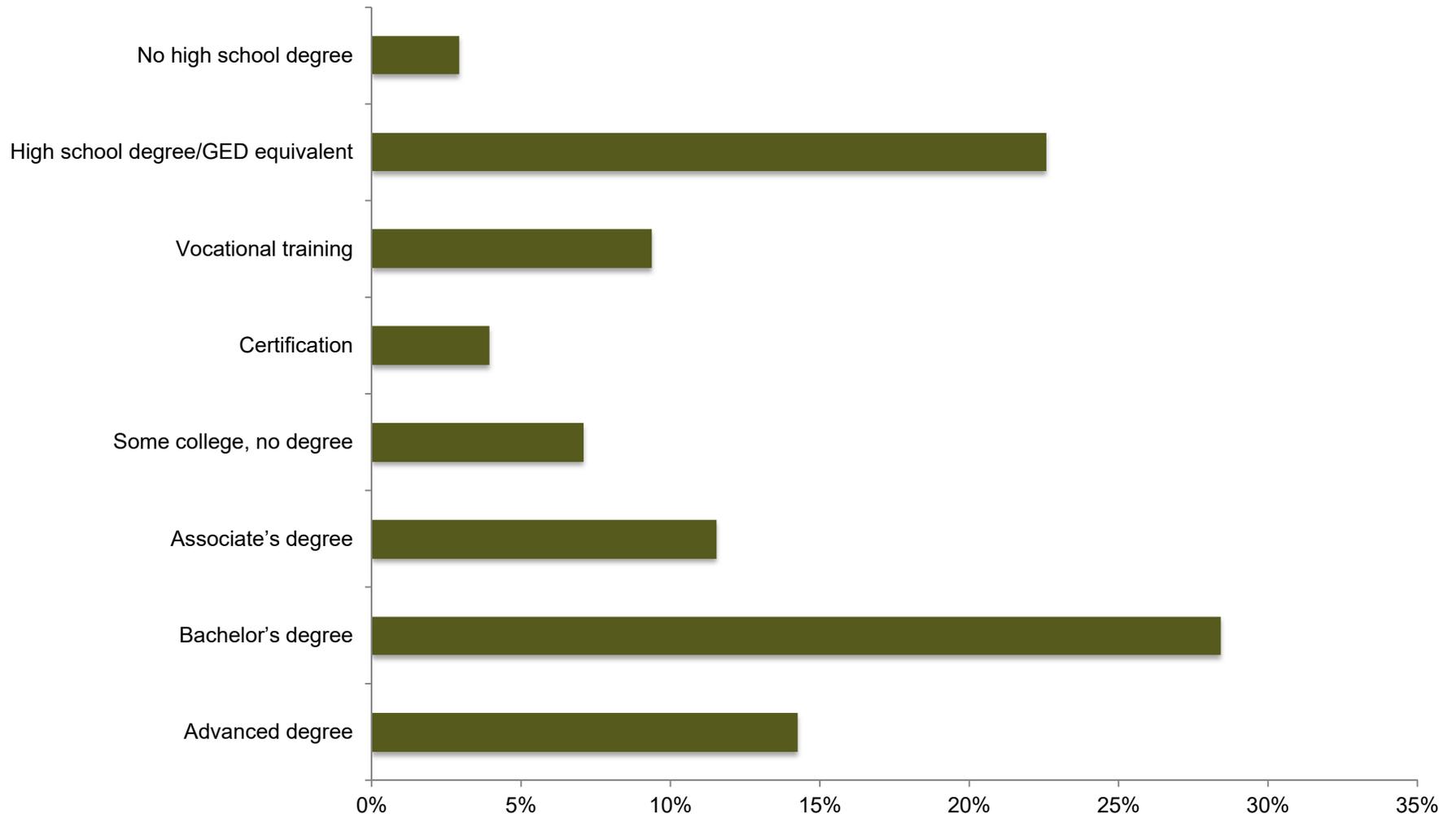


EXHIBIT 5: LEVEL OF EDUCATIONAL ATTAINMENT ORGANIZATIONS NEED TO HIRE IN 5+ YEARS

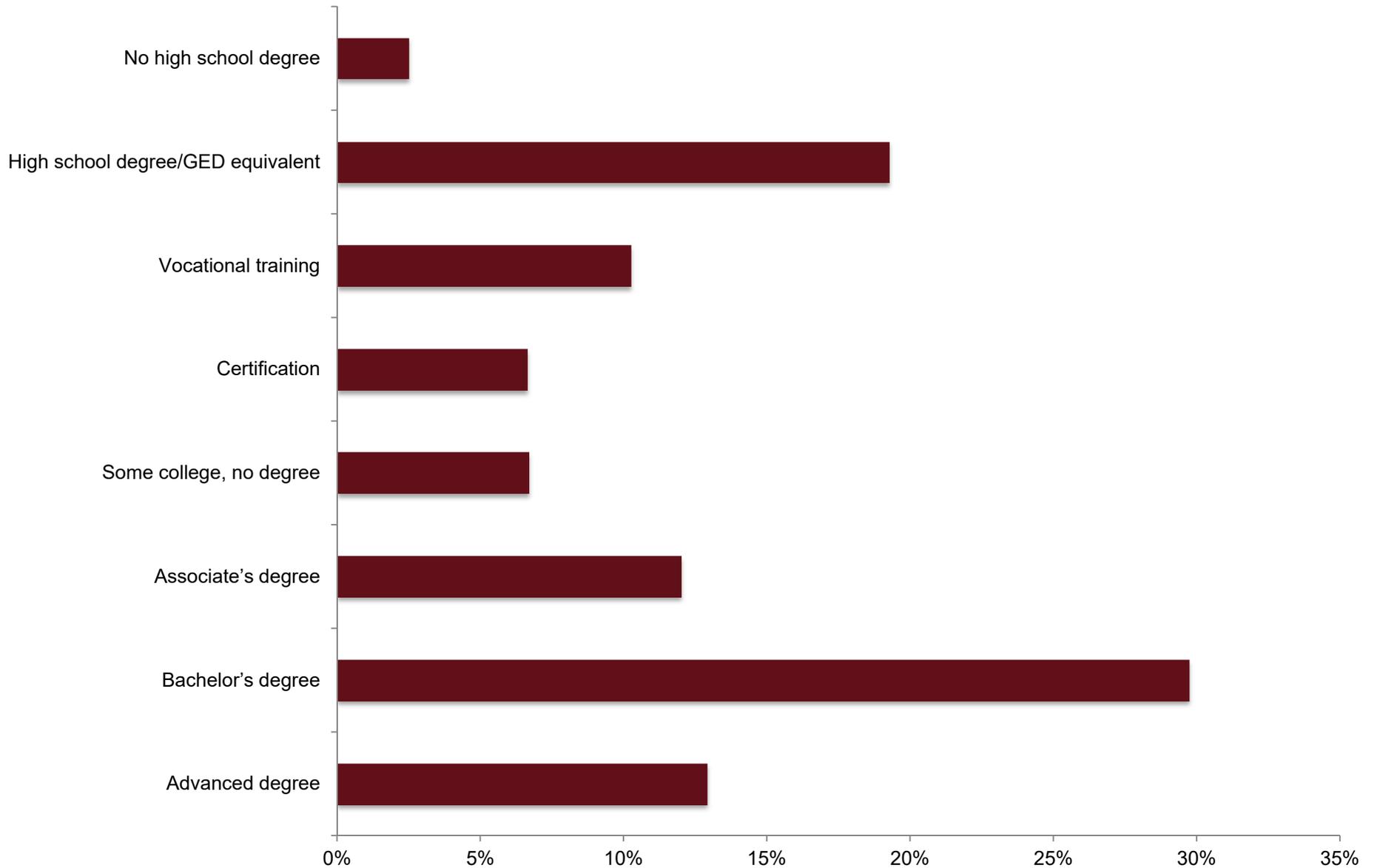


EXHIBIT 6: OCCUPATIONS MOST NEEDED NOW AND IN 5 YEARS

Top 10 occupations needed now	Top 10 occupations needed in 5 years
Management	Office and administrative support
Office and administrative support	Management
Business and financial	Business and financial
Sales/Marketing	Computer
Computer	Training
Installation, maintenance and repair	Sales/Marketing
Healthcare professionals/Medical	Legal
Healthcare support	Building and grounds maintenance
Transportation	Installation, maintenance and repair
Food preparation and serving related	Manufacturing

EXHIBIT 7: DISTRIBUTION OF POSITIONS WITHIN OCCUPATION, BY THE MINIMUM LEVEL OF EDUCATION REQUIRED

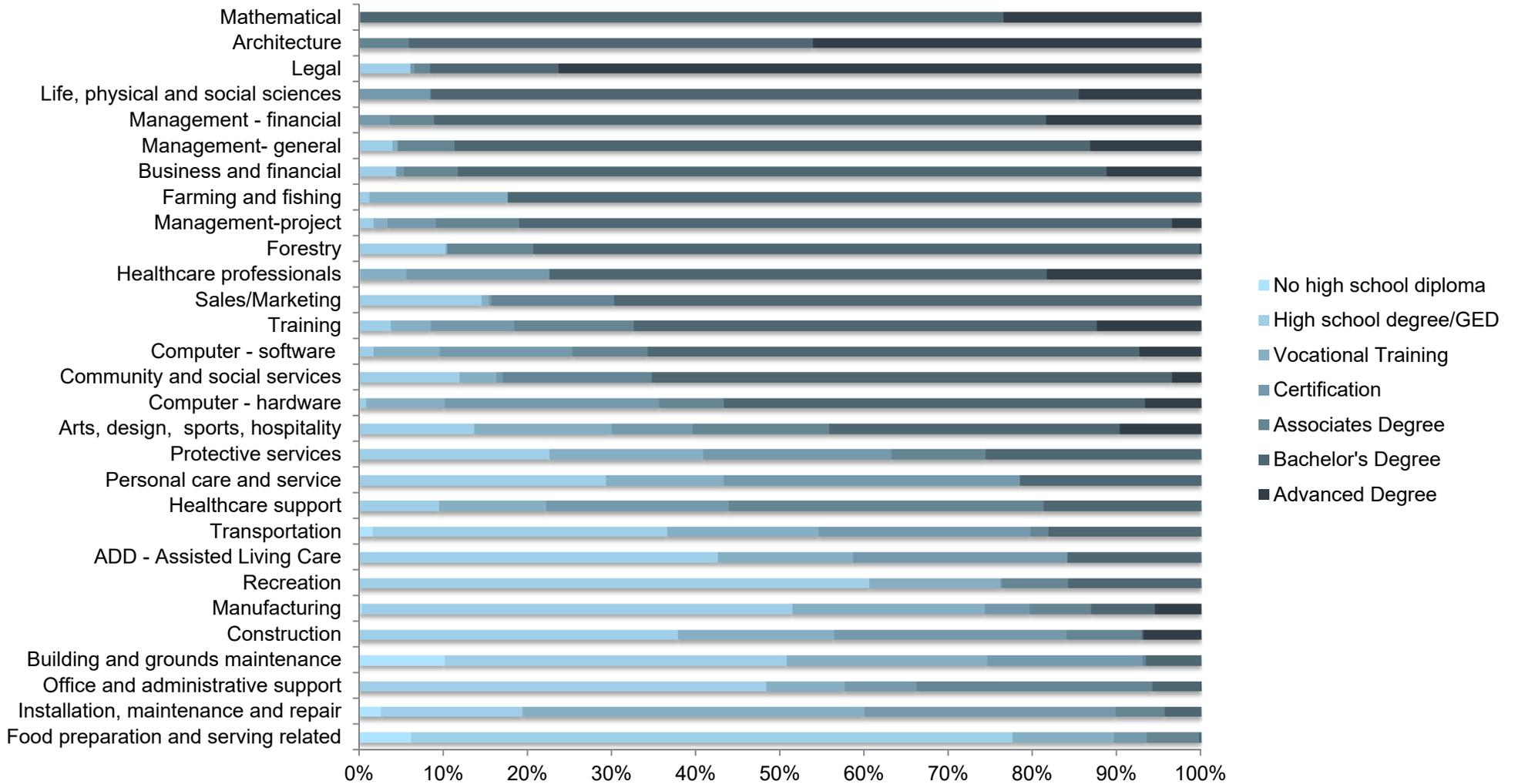


EXHIBIT 8: PERCENTAGE OF POSITIONS THAT REQUIRE A BACHELOR'S DEGREE OR HIGHER, BY OCCUPATION

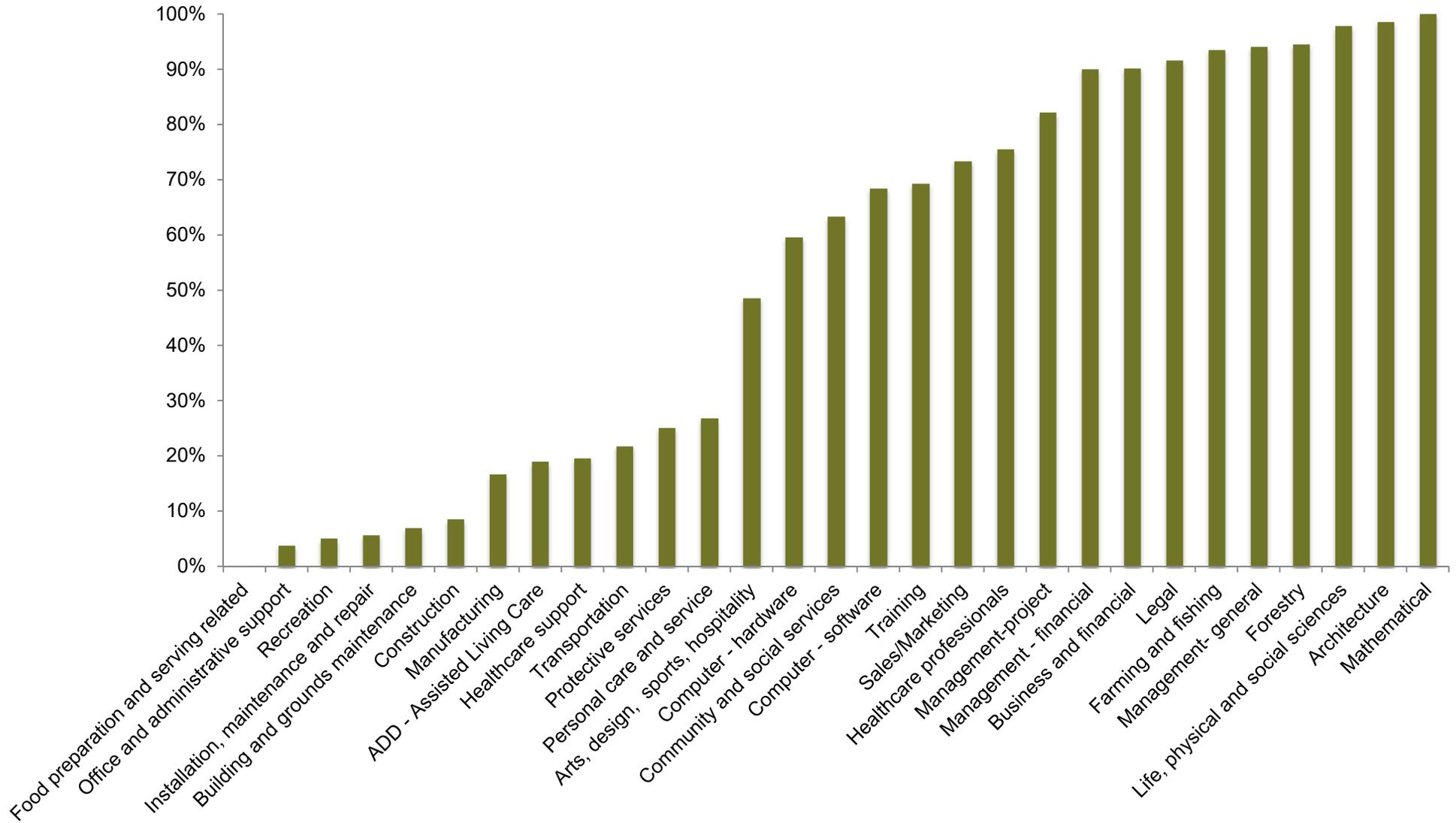


EXHIBIT 9: TOP TEN AREAS THAT ARE MOST DIFFICULT TO FIND QUALIFIED APPLICANTS

Top Ten Areas
Computer - software (engineering, programming, database management, etc.)
Healthcare professionals
Sales/Marketing
Computer - hardware (network administrator, equipment, etc.)
Management - financial
Management- general
Management-project
Business and financial
Office and administrative support
Mathematical

EXHIBIT 10: DISTRIBUTION OF EMPLOYER ASSESSMENT OF THE DIFFICULTY FINDING POTENTIAL EMPLOYEES, BY LEVEL OF EDUCATIONAL ATTAINMENT

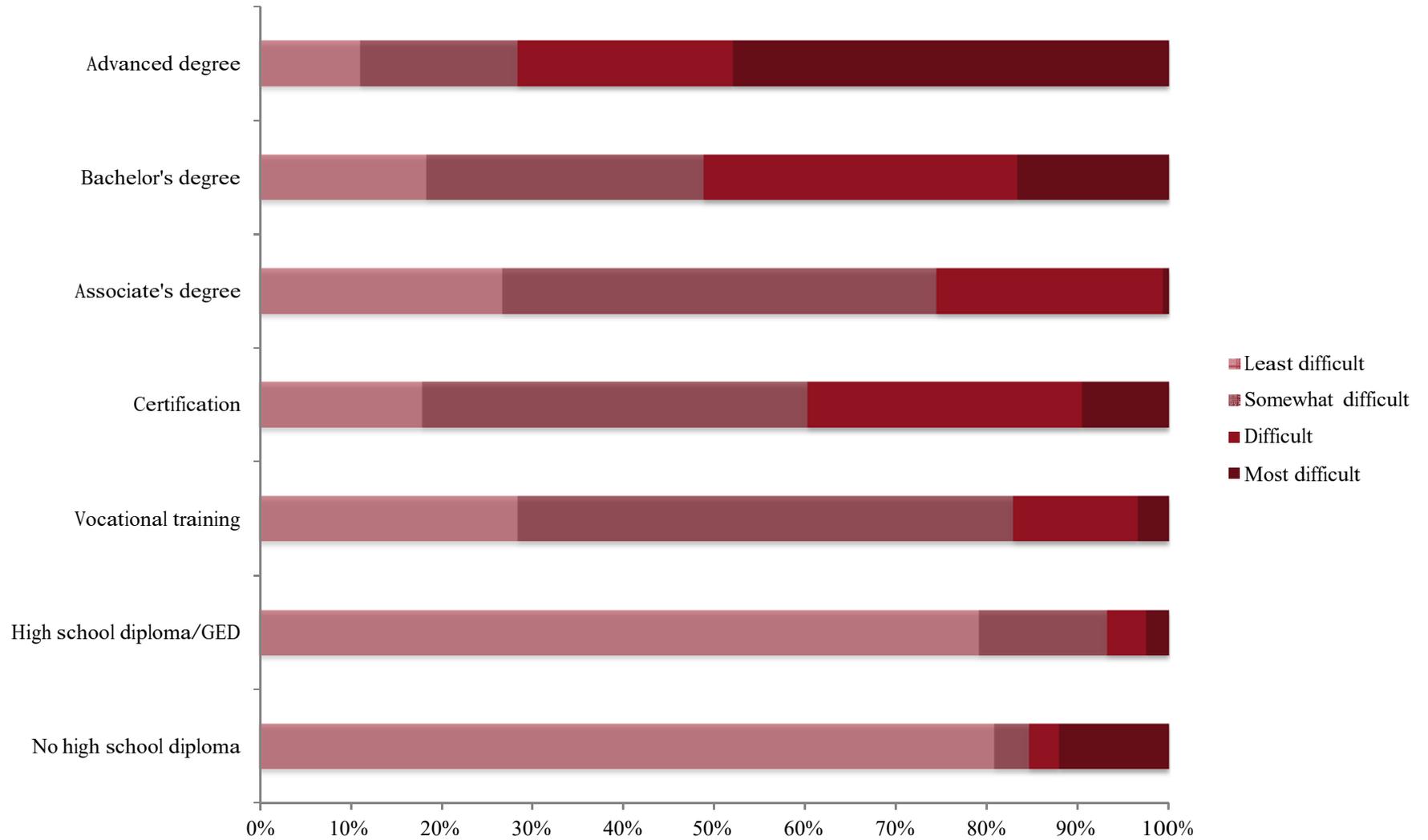


EXHIBIT 11: TOP DEGREE AREAS EMERGING OVER THE NEXT 5 YEARS

Degree Areas
Computer Science/Technology
Business and Economics
Engineering
Health Science
Communications

EXHIBIT 12: EMPLOYERS' LEVEL OF SATISFACTION WITH NEWLY GRADUATED EMPLOYEES, BY SCHOOL TYPE

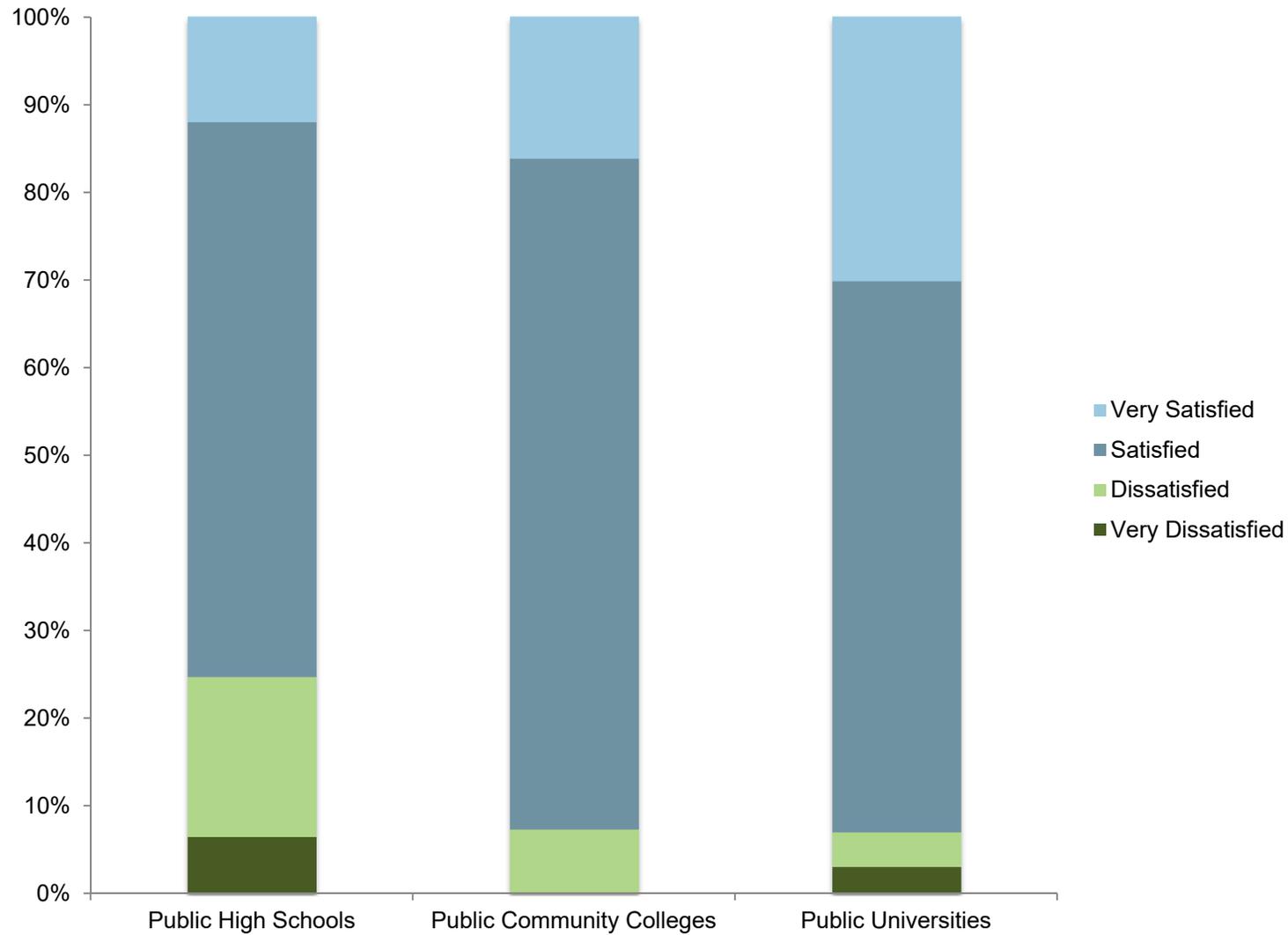


EXHIBIT 13: ESTIMATE OF THE PERCENTAGE OF EMPLOYEES NEEDED IN THE FUTURE, 5+ YEARS FROM NOW, BY HIGHEST LEVEL OF EDUCATIONAL ATTAINMENT AND REGION

Level of Education	Eastern Idaho	North Idaho	South Central Idaho	Southwest Idaho	Idaho (All Regions)
No high school degree	0.7	0.5	0.8	4.3	2.5
High school degree/GED equivalent	13.1	20.1	30.2	19.7	19.3
Vocational training	5.6	14.7	12.1	9.1	10.3
Certification	4.8	13.8	11.9	2.9	6.7
Some college, no degree	3.1	8.3	5.1	7.0	6.7
Associate's degree	28.5	11.6	8.5	7.5	12.0
Bachelor's degree	32.1	25.5	25.6	31.7	29.7
Advanced degree	12.1	5.4	5.8	17.8	12.9
Certification + Associate's degree + Bachelor's degree + Advanced degree	77.4	56.4	51.8	59.9	61.3
Bachelor's degree + Advanced degree	44.1	31.0	31.4	49.5	42.6

Notes:
 [1] Based on the question: "Based on the highest level of educational attainment, estimate the percentage of employees needed in the future, 5+ years from now."
 [2] Weights are constructed as follows: 1-10 employees = 5; 11-50 employees = 30; 51-100 employees = 75; 101-500 employees = 300; and >500 employees = 5,000.

EXHIBIT 14: TOP FIVE DEGREE AREAS EMERGING IN THE NEXT FIVE YEARS, BY REGION

Eastern Idaho	North Idaho	South Central Idaho	Southwest Idaho
Business and Economics	Computer Science/Technology	Business and Economics	Computer Science/Technology
Computer Science/Technology	Business and Economics	Computer Science/Technology	Business and Economics
Engineering	Engineering	Engineering	Health Science
Health Science	Communications	General Science	Engineering
Communications	Mathematics	Vocational Education	General Science
<hr/>			
Idaho (all regions)			
Computer Science/Technology			
Business and Economics			
Engineering			
Health Science			
Communications			

[1] Based on the question: "In order of importance, what top five degree areas do you see emerging in your hiring needs in the next 5 years?" (Question 13).

[2] Weights are constructed as follows: 1-10 employees = 5; 11-50 employees = 30; 51-100 employees = 75; 101-500 employees = 300; >500 employees = 5,000 ("alternative weight").

***EXHIBIT 15: CURRENT EDUCATION LEVEL OF IDAHO'S 25-34 YEAR
OLDS (206,220 TOTAL)***

No High School diploma	9%
High School Diploma/GED	27%
Some college, no degree	24%
Certificates	5%
Associate degrees	10%
Bachelor degrees	19%
Advanced degrees	7%

(Source: State Board of Education 2013)

EXHIBIT 16: RECOVERY JOB GROWTH AND EDUCATION REQUIREMENTS THROUGH 2020 A GEORGETOWN UNIVERSITY STUDY, JUNE 2013

The following section is an excerpt from the complete study. Here is the link to the entire study:
<http://cew.georgetown.edu/recovery2020>

Editor's note: Georgetown University estimates that there will be 55 million job openings in the United States between 2013 and 2020. Of those, 24 million will open because of job creation and 31 million to replace retiring Baby Boom workers. The University says 65 percent of those new jobs will require a post-secondary credential. If the U.S. stays on its current educational course, the nation will fall 5 million workers short of filling those new job openings.

EXHIBIT 17: TO WHAT EXTENT WILL DEMOGRAPHIC CHANGES HELP IDAHO REACH ITS EDUCATIONAL ATTAINMENT GOALS FOR 2020?

The following study was conducted by ECONorthwest for Idaho Business for Education. The study analyzes the effects of demographic changes on the educational attainment of 25 to 34 year olds in Idaho.

<http://www.idahoednews.org/wp-content/uploads/2013/10/IBE-60percent-goal-study.pdf>

EXHIBIT 18: PARTNERS WHO DISTRIBUTED SURVEY FOR IBE

Idaho Business for Education
Twin Falls Chamber of Commerce
Meridian Chamber of Commerce
Boise Chamber of Commerce
Pocatello Chamber of Commerce
Coeur d'Alene Chamber of Commerce
Caldwell Chamber of Commerce
Idaho Association of Commerce and Industry
Idaho Chamber Alliance
Idaho Mining Association
Sustain Blaine
Idaho Technology Council
Associated General Contractors
Idaho Banking Association
Idaho Falls Chamber of Commerce
Lewis Clark Valley Chamber of Commerce
Nampa Chamber of Commerce
Idaho Dairyman's Association

***EXHIBIT 19: THE ECONOMIC IMPACT OF POSTSECONDARY
EDUCATION ON THE ECONOMIC AND SOCIAL WELL-BEING OF
AMERICAN SOCIETY, EDUCATION POLICY INSTITUTE, MAY 2005.***

The following report was written by the Education Policy Institute.

<http://www.educationalpolicy.org/pdf/gates.pdf>

EXHIBIT 20: “RIGOR REDEFINED: THE SEVEN SURVIVAL SKILLS FOR CAREERS, COLLEGE AND CITIZENSHIP,” BY TONY WAGNER,

Tony Wagner is the C-Director of the change Leadership Group at the Harvard Graduate School of Education. Also see Wagner’s Book: “The Global Achievement Gap: why Even Our Best Schools Don’t Teach The New Survival Skills Our Children Need – and What We Can Do About It (New York: Basic Books, 2008)

The following is a summary of the key elements of the book written by Tony Wagner.

http://www.hosa.org/emag/articles/advisors_corner_oct08_pg2_5.pdf