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Jobs in Demand

Identifying High Growth Occupations by Degree Level



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Executive Summary

With unemployment reaching record high rates in the past few years—as high as 10% in 2009ⁱ—many Americans continue to struggle, unable to find jobs that match their skills or accepting jobs that under-employ them. Further, with rapidly shifting trends related to demographics, technology and skillsets, the employment landscape continues to evolve. In order to keep pace, many American’s have gone back to school to gain new skills or work towards new careers. But with tuition continuing to increase, it is crucial for prospective students to recognize the best college pathway to ensure their future success after graduation.

NerdWallet Education has analyzed occupational data provided by the Bureau of Labor Statistics (BLS) that uses census and economic data to forecast job growth through 2020. NerdWallet’s *Jobs in Demand* study identifies occupations with high growth and provides guidance for anyone looking to change careers and improve their future.

Jobs Requiring Associate’s Degrees In Greatest Demand

Identifying those jobs with the greatest growth provide the clearest pathway to increased salary and shortest payback period. Of the 163.5 million jobs forecasted by the BLS for 2020, high growth occupations account for 10% of the total job pool (15.9 million). When analyzing those occupations with growth rates greater than 25%, jobs requiring an associate’s degree outpace all other degree levels.

Degree Type	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection
HS or Equivalent	31%	1,037,100	4,712,200
Associate’s	35%	1,143,600	5,223,800
Bachelor’s	33%	1,014,100	4,348,300
Master’s	32%	156,200	634,700
Doctoral or Professional	33%	244,200	1,004,000
High Growth Jobs (2020)	33%	3,595,200	15,923,000

Table 1: Comparison of High Growth Jobs by Degree Type

- Among high growth occupations, jobs requiring an associate’s degree lead all other degree levels in terms of growth percentage, volume, and total 2020 projection.

- Healthcare jobs are the driving force behind the rapid expansion of jobs requiring an associate's degree.

Associate's and Bachelor's Graduates Have Greatest Earning Potential

For many prospective students, the greatest challenge in going back to school is how to afford the tuition bills. The cost of college may seem intimidating, but in most cases students will earn a return on their educational investment in just a few short years after graduation.

- Jobs requiring an associate's degree have the shortest payback period of only 2 years, due to high median salary and significantly lower tuition rates.
- Every 2 additional years of post-secondary education up to the bachelor's degree will earn the student an extra \$13,759 on his/her salary.
- A higher degree does not always mean a higher salary. Some jobs requiring a bachelor's degree will earn more than high growth jobs requiring a master's degree.

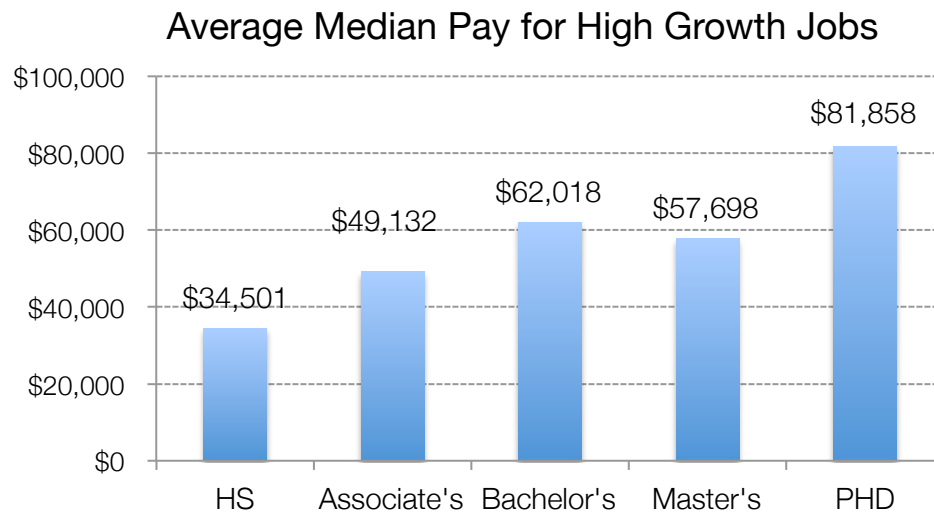


Figure 1: Comparison of Average Median Pay by Degree Required

In the past few years, student debt has come to the nation's forefront as a serious issue weighing down our young generation. News articles have cited student debt as a major hurdle for youth as they progress through life—delaying major life milestones such as home ownership. To determine the relative burden of schooling at different levels, we calculated the payback period. The payback period is defined as the amount of time needed to pay back education costs given the increase in salary from higher education. The baseline was the salary for jobs requiring a high school degree.

Payback Period in Years

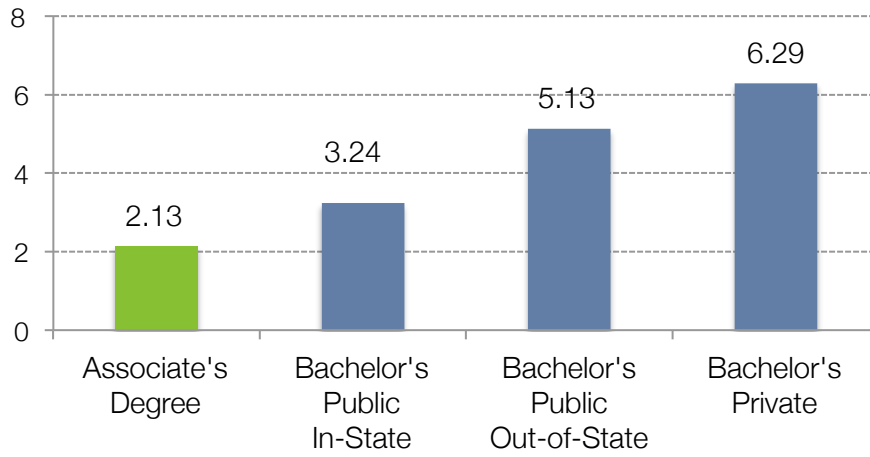


Figure 2: Comparison of Payback Period by Degree

Methodology

The objective of this study was to identify and analyze high growth jobs to help those considering a new career. The primary source of data was gathered from the Bureau of Labor Statistics (BLS) Occupational Handbook:
<http://www.bls.gov/ooh/>.

The BLS Occupational Handbook offers descriptions, statistics and data on 538 occupations. The statistics on occupations is based on information from the most recent census in 2010 with projected growth rates for the next decade through 2020.

Although the BLS provides information on over 500 occupations, this study focuses on the 60 unique occupations with the highest growth rates through 2020. Of the 163.5 million jobs forecasted by the BLS for 2020, high growth occupations account for 10% of the total job pool (15.9 million). For those considering returning to school, these 60 high growth jobs represent the most secure pathway to a higher salary and short payback period. A more detailed analysis of the full BLS data set, including economic analysis, can be found at:
<http://bls.gov/news.release/ecopro.nr0.htm>

According to the BLS, the average growth rate of total jobs will be approximately 14.3% between the period of 2010-2020.ⁱⁱ For the consideration of this study our high growth threshold is set at 2/3 greater than the average growth rate, or 25%. All 60 occupations profiled in this study satisfy this growth rate.

Comparison by Degree Required

Of the 163.5 million jobs forecasted by the BLS for 2020, high growth occupations account for 10% of the total job pool (15.9 million). One of the first relationships examined was that between degree requirement in high growth occupations and the growth metrics of average growth rate, total employment change by volume, and total projected jobs in 2020.

Degree Type	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection
HS or Equivalent	31%	1,037,100	4,712,200
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Doctoral or Professional	33%	244,200	1,004,000
High Growth Jobs (2020)	33%	3,595,200	15,923,000

Table 1: Comparison of High Growth Jobs by Degree Type

Of the high growth rate occupations, those requiring an associate's degree have the highest growth by sheer number as well as growth rate. They have an average growth rate of 35%, compared to an average growth rate of 33% for those jobs requiring a bachelor's or master's degree. Further, the job pool requiring an associate's degree will grow by 106,500 more than the second highest growth volume, occupations requiring a high school degree. In 2020, there is projected to be 875,500 more jobs available requiring an associate's degree over the second highest volume, occupations requiring a bachelor's degree.

Analysis of Jobs Requiring an Associate's Degree

Growth by Category

The high growth of the jobs requiring an associate's degree was examined by breaking down the jobs by category. The Bureau of Labor Statistics pre-defines occupations by category, enabling comparisons across industries.

By 2020, the number of jobs requiring an associate's degree will be 5,223,800 with an astounding 88% within the healthcare category. Healthcare-related jobs comprise nine out of the eleven high growth jobs requiring an associate's degree. The majority of these jobs are aides and technicians that help physicians and the overall diagnosis process within hospitals and doctor's offices.

Degree Type	Job Growth (percent)	Total 2020 Projection
Healthcare	37%	4,603,600
Installation, Maintenance, Repairs	31%	570,400
Education, Training, Library	25%	49,800

Table 2: High Growth Job Categories Requiring an Associate's Degree

The trend related to the healthcare category was also observed at other education levels, however the highest growth was found at the associate's degree level. Healthcare also leads growth by volume, accounting for an increase of 1,018,100 jobs requiring an associate's degree.

Even more impressive is the increase in salary within the healthcare field at the associate's level. Being hired at a high growth healthcare job at the associate's degree level as opposed to the high school degree level provides an average salary increase of \$22,185. That's a 174% increase of the average compensation for an occupation requiring a high school degree in healthcare.

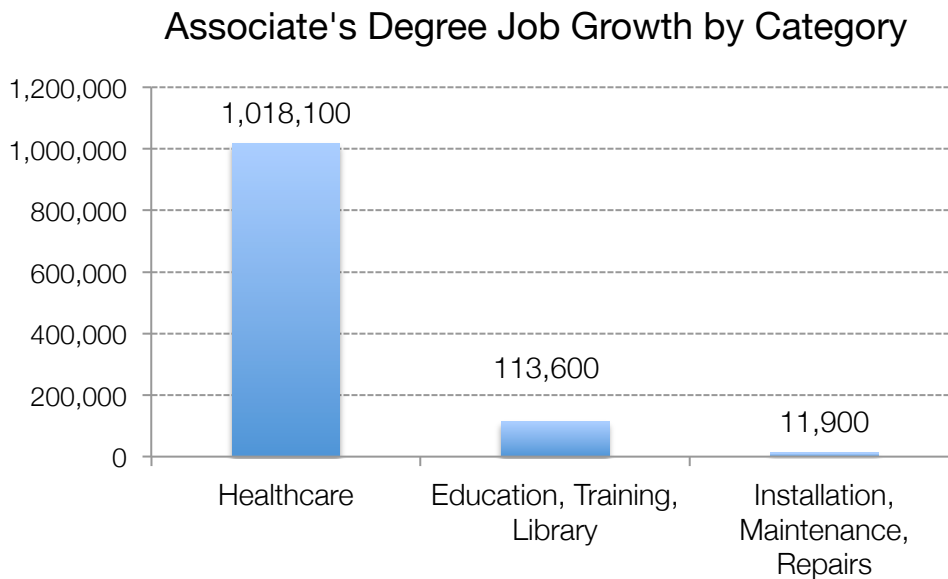


Figure 3: Associate's Degree Job Growth by Category

It is clear that the boom in Healthcare is the ultimate reason behind the rapid growth of jobs requiring an associate's degree. This fact is directly correlated with the aging baby boomer population. By 2020, many of the baby boomer population

will have transitioned into the 65 and older population. By 2020, the 65 and older population will increase to 55 million, a 36% increase as compared to 2010, much higher than the decade increase 2000-2010 of 15%.ⁱⁱⁱ The aging population will push for more healthcare jobs. The extreme expansion in the healthcare field will open up jobs requiring specialization in aiding major functions in the health setting—like sonographic technicians and physician aides.

High Growth Jobs Requiring 2-Years Compared to 4 Years of Education

Jobs requiring an associate’s degree far outpaced jobs requiring other degrees. To better understand the high growth rate, it was compared to the next highest growth rate, that of the bachelor’s degree.

Occupation	Job Growth (percent)
Veterinary Technologists and Technicians	52%
Physical Therapist Assistants and Aides	45%
Diagnostic Medical Sonographers	44%
Occupational Therapy Assistants and Aides	41%
Dental Hygienists	38%
Medical Equipment Repairers	31%
Cardiovascular and Vascular Technologists	29%
Radiologic Technologists	28%
Respiratory Therapists	28%
Registered Nurses	26%
Preschool Teachers	25%

Table 3: Growth Rate of Jobs Requiring an Associate’s Degree

Occupation	Job Growth (percent)
Biomedical Engineers	62%
Meeting, Convention and Event Planners	44%
Interpreters and Translators	42%
Market Research Analysts	41%
Health Educators	37%
Cost Estimators	36%
Preschool and Childcare Center Directors	35%
Geographers	35%
Personal Financial Advisors	32%
Database Administrators	31%
Software Developers	30%
Athletic Trainers	30%
Network and Computer Systems Administrators	28%
Social and Community Service Managers	27%
Financial Examiners	27%
Actuaries	27%
Logisticians	26%
Social Workers	25%
Surveyors	25%

Table 4: Growth Rate of Jobs Requiring a Bachelor's Degree

Although the bachelor's degree pool includes Biomedical Engineers, which has the highest growth rate of all occupations in the study, jobs with extremely high growth rate compose a greater portion of the jobs requiring an associate's degree. For the associate's degree, that's 5 out of the 11 jobs that have a growth rate of 38% or higher, whereas for bachelor's degrees, only 4 out of the 19 jobs meet that requirement.

Analysis of Jobs Requiring Other Degrees

High School Diploma or Equivalent

Despite the growing trend toward jobs requiring higher education, occupations requiring high school diplomas still consists of a fair number of high growth occupations.

Occupational Category	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection	Average Median Pay
Construction and Extraction	35%	505,000	2,392,300	\$38,443
Administrative Support	29%	24,100	106,300	\$37,150
Community & Social Service	28%	129,400	599,100	\$33,160
Building and Grounds Cleaning	26%	17,900	86,300	\$30,340
Healthcare	31%	289,300	715,160	\$30,066
Entertainment and Sports	29%	71,400	314,300	\$28,340
Grand Total	32%	1,037,100	4,213,460	\$34,500

Table 5: Metrics of High Growth Jobs Requiring a High School Diploma

Construction and Extraction is the driving force behind the high growth within the high school diploma field. It leads in all categories with an average job growth rate of 35%. The second highest category, Healthcare, is 4% below at 31%. Construction and Extraction accounts for 57% of the total high growth jobs available in 2020 requiring a high school degree (2,392,300). Additionally, construction also has the highest average salary with \$38,443. The most in demand jobs by growth rate within the construction category are Reinforcing Iron and Rebar workers as well as Glaziers, with a growth rate of 49% and 42% respectively.

Bachelor's Degree

According to the U.S. Census Bureau, March 2011 marked the very first time that more than 30 percent of U.S. adults 25 and older had at least a bachelor's degree.^{iv} With a record number of bachelor's degrees granted in the U.S., the following question was whether job growth in this sector would follow. Growth metrics and average pay for jobs requiring a bachelor's degree were compared.

Occupational Category	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection	Average Median Pay
Computer and IT	30%	401,400	1,772,500	\$77,727
Business and Financial	34%	317,500	1,202,200	\$62,363
Community and Social Service	31%	184,400	898,300	\$44,155
Management	31%	51,600	249,300	\$50,455
Media and Communication	42%	24,600	83,000	\$43,300
Architecture and Engineering	44%	22,700	89,600	\$68,210
Math	27%	5,800	27,500	\$87,650
Healthcare	30%	5,500	23,700	\$41,600
Life, Physical and Social Science	35%	600	2,200	\$72,800
Total	34%	1,014,100	4,348,300	\$60,918

Table 6: Metrics of High growth Jobs Requiring a Bachelor's Degree

In terms of the different growth metrics, the results are mixed for jobs that require a bachelor's degree. The highest job percentage growth falls in Architecture and Engineering, mostly due to the fact that Biomedical Engineering has an average job growth of 62%.

Within the other metrics, Computer Information and Technology places at the top. Jobs within the Computer Information and Technology field will increase by 401,400, or 39% of all high growth job increase that require a bachelor's degree. In 2020, there will be 1,772,500 jobs available within the Computer Information and Technology field, accounting for 40% of all high growth jobs at this degree level. Those in the Computer Information and Technology field will also enjoy the highest average median pay of \$77,726.

These results are not particularly surprising—the technology sector has been flourishing in the last decade, revolutionizing the way people communicate and interact. There is no expectation for the prevalence of technology in our daily lives to decline. Expansion within the tech sector will continue to drive increased demand and compensation for this high-skill category.

Master's Degree

Only four jobs at the master's degree level qualified as high growth for the conditions of this study. While other studies point out the strong growth of occupations requiring master's degrees, this is often due to a lack of declining occupations to negatively impact the forecast. However, when identifying those jobs with exceptionally high demand greater than 25%, only four occupations meet this threshold.

Occupational Category	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection	Average Median Pay
Community and Social Service	32.5%	95,100	381,200	\$36,030
Healthcare	31.5%	61,100	253,500	\$79,365
Total	32%	156,200	634,700	\$57,698

Table 7: High Growth Jobs Requiring a Master's Degree

There are only two categories for high growth jobs requiring a master's degree—Community and Social Service and Healthcare. Within these jobs, the Community and Social Service jobs outpace the Healthcare jobs in growth and overall projected jobs in 2020. However, the Healthcare jobs on average earn far more, over twice the amount of those in the Community and Social Service category--\$79,365 as compared to \$36,030.

It is generally thought that the greater education level corresponds to a higher salary. While this, in general, is a trend, it is not always the case. A great example is, for instance, Rehabilitation Counselors. Despite the fact that Rehabilitation Counselors requires a master's degree, the median salary is only \$32,350. Compare that to a Dental Hygienist, who typically holds an associate's degree and has a median salary of \$68,250.

Doctorate's Degree

According to the last census, only 2.5 million people 25 years and older hold this time intensive degree. However, there are eight total high growth jobs requiring a minimum of a Doctorate's degree.

Occupational Category	Job Growth (percent)	Job Growth (volume)	Total 2020 Projection	Average Median Pay
Healthcare	33%	200,100	834,800	\$83,128
Life, Physical, & Social Science	34%	44,100	169,200	\$78,045
Total	34%	244,200	1,004,000	\$80,587

Table 8: Metrics of High growth Jobs Requiring a Doctorate's Degree

Only two high growth categories require a Doctoral or Professional Degree: Healthcare and Life, Physical and Social Science. Neither has a significant difference in their job growth percentage. However, the difference in employment change by volume is far more compelling—the healthcare field is much larger than the life, physical and social science field. The Volume change is 200,100 over four times that of the life, physical and social science field. However, both areas are \$5,000 within each other's earning potential.

As expected, the healthcare medical industries are the key drivers behind the growth at the doctoral level. All eight jobs listed are connected to providing medical services—from developing cures such as a medical scientist to practicing physicians such as optometrists and chiropractors.

Comparison by Salary

Post-secondary education is arguably the greatest personal investment one can make. College has long been considered the ticket to higher earnings, with the traditional consensus that the greater time spent developing skills and advanced degrees, the more valuable you value to a potential employer.

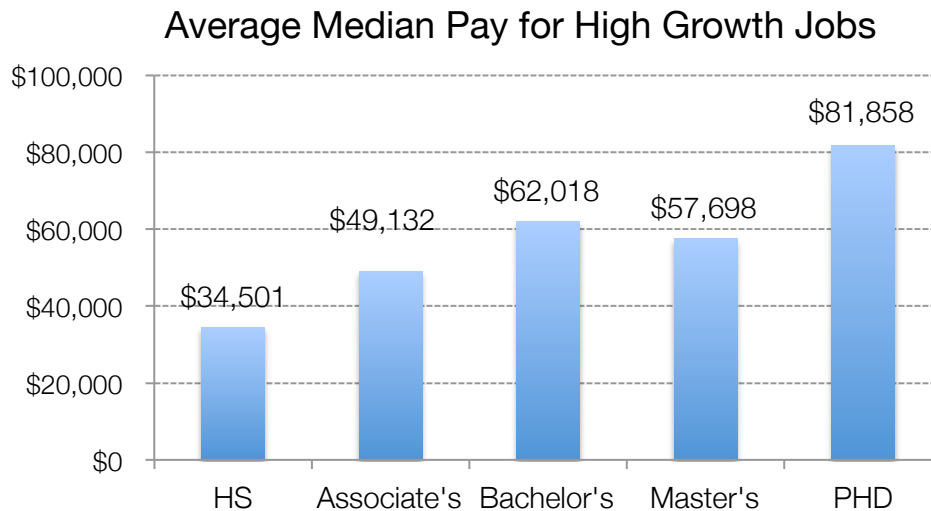


Figure 1: Comparison of Average Median Pay by Degree Required

When comparing the average median pay of high growth jobs by degree, there is a general trend of more education resulting in a higher pay. However, that is not the case when comparing the bachelor's degree and the master's degree. The high growth jobs requiring the minimum of a bachelor's degree, on average, pays \$4,321 more than high growth jobs requiring a master's degree.

A possible explanation for this is that the BLS handbook uses the minimum requirement necessary for entry level to categorize a job. Thus, while a master's degree could make a candidate more competitive in any of these jobs, a bachelor's degree is the minimum necessary for consideration.

Another interesting observation in this data set is the incremental salary difference between education levels. The difference between a PhD and a bachelor's is \$19,839. The difference between a bachelor's and an associate's degree is \$12,887, and the difference between an associate's degree and a high school degree is \$14,631. The outlier here would be the jobs requiring a master's degree, which has an average salary below jobs requiring lower education. As mentioned previously, Rehabilitation Counselors only average \$32,350, which pulls down the overall average for occupations requiring a master's degree.

The education levels with the most high growth jobs are associate's and bachelor's level. These are the two most common college pathways attained by American students. The difference between an associate's degree and high school diploma and a bachelor's degree and an associate's degree is \$13,759. This would mean that each additional two years of education would add \$13,759 to your annual salary.

Salary and Job Growth Rate

Often, higher paying jobs indicate high demand, so salary and growth rate were examined to see whether there was an actual correlation.

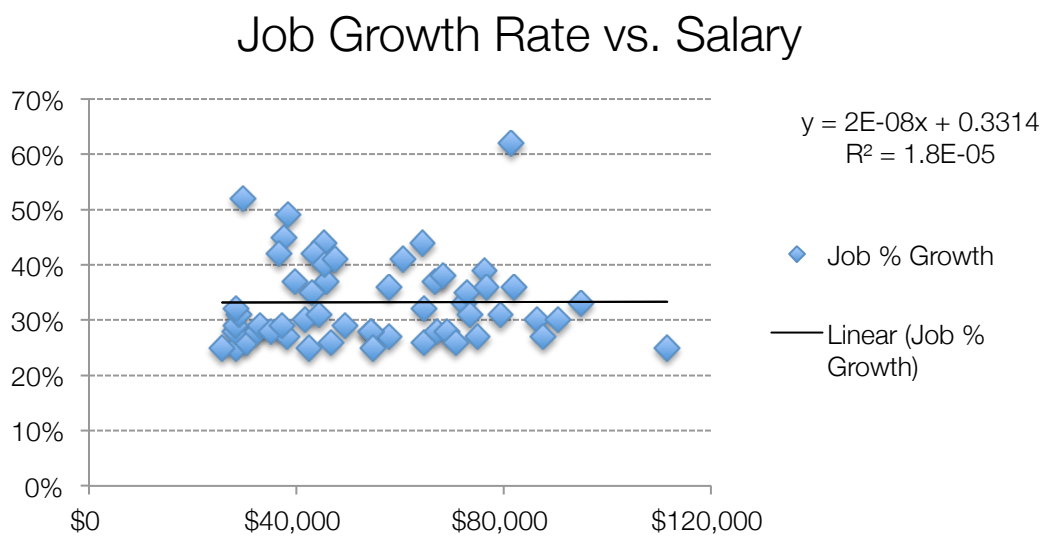


Figure 4: Job Growth Rate by Salary

Ultimately, there was no correlation found between salary and projected growth rate for jobs. There are a variety of jobs that have relatively low average median pay that rank fairly high on the growth scale, like veterinary technologists and technicians, which has the 7th lowest average salary but 2nd highest growth rate.

Comparing Salary by Job Category

Although it had been previously found that Healthcare had a high growth rate within jobs requiring an associate's degree, it was unclear which category of high growth jobs had the highest average salary. Occupations were aggregated by category and compared by the average of median pay.

Average Median Pay

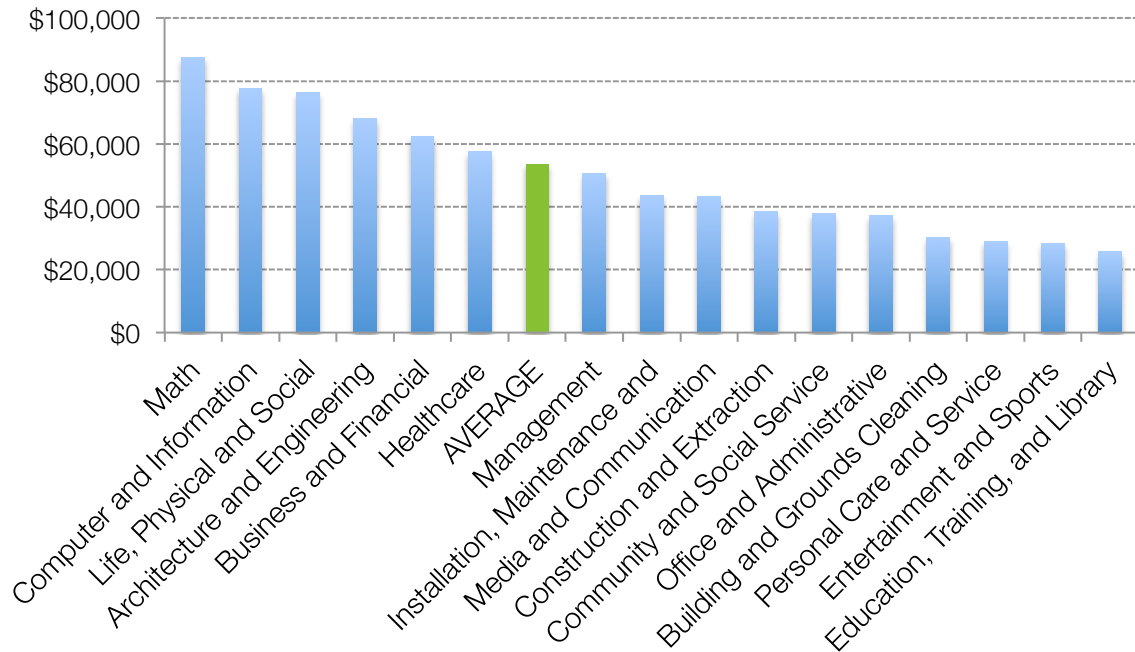


Figure 5: Average Median Pay by Category

The highly technical categories of Math and Computer and Information Technology were ranked first and second, respectively. The combination of highly specialized and technical knowledge with the rapidly growing technological field contributes to these results. Within these two fields, the highest earning degree is Software Developers, with \$90,530 and will contribute the most jobs by number. A projected 913,100 Software Developer jobs are expected to be in demand within the next decade. Database Administrators, however, are projected to grow the fastest at 30%. The rapid growth of both of these occupations reflects the expansion of the high-tech field and the consumer's average consumption of high-tech goods.

Understanding the Payback Period

If post-secondary education is considered an investment, then it is natural to think about how to maximize the return on this personal investment. From the median pay of high growth jobs at each degree level, one can calculate the ROI for each additional degree level. By comparing this salary increase with the average estimated full-time undergraduate's educational costs, we can identify the appropriate payback period for each degree level.^v

Costs of College

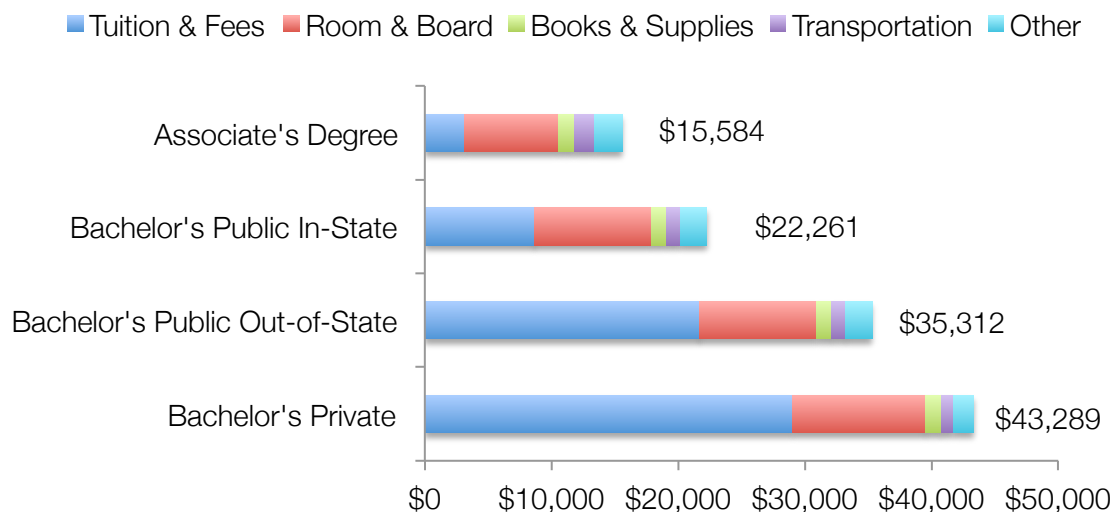


Figure 6: Average Cost of College by Degree

In the past few years, student debt has come to the nation's forefront as a serious issue weighing down our young generation. News articles have cited student debt as a major hurdle for our youth as they progress through life—delaying major life milestones such as home ownership. So, to measure the worth of each degree, payback periods were compared. How long would it take each student to pay back the cost of their education using just the incremental increase in their average salary from their higher education? Those with an associate's degree would earn an extra \$13,593 on average in a high growth job than if they just had their high school diploma. Those with a bachelor's degree would earn an extra \$27,517.

Payback Period in Years

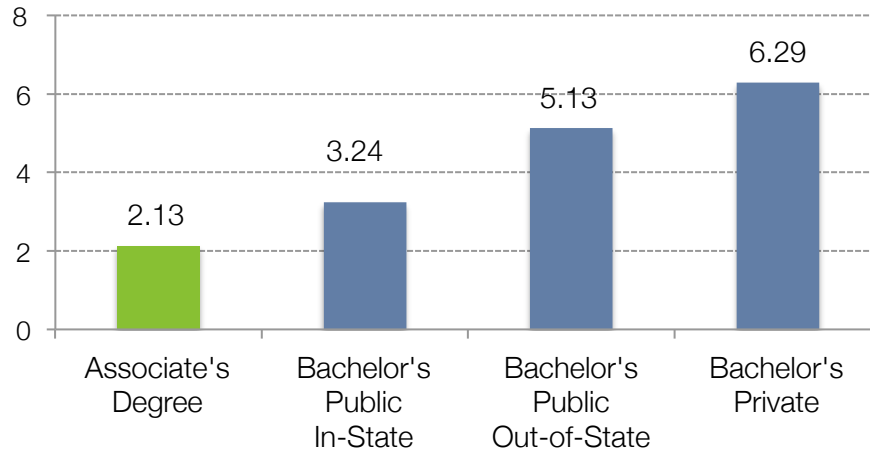


Figure 2: Comparison of Payback Period by Degree

Using the extra income they would receive on average by obtaining a higher degree, the associate's degree graduate has the shortest pay back period of 2 years. The yearly tuition and fees are dramatically lower at the associate's degree level than the other levels. Almost 3 times lower than a public in state on campus institution and over 9 times lower than a private non-profit institution. With much higher tuition and fees, a bachelor's degree at a public four year in-state on-campus institution would have a payback period of 3.24 years, a bachelor's degree at a public four-year out-of-state on-campus institution would have a payback of 5.13. A bachelor's degree at a private non-profit four-year on-campus institution would have a payback period of 6.29 years.

References

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