

Measuring the Salary Value of Education and Work Experience in Massachusetts

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A Regression-Model Study of Salaries in New-Hire Job Postings

Sources of Value-Added.

Massachusetts has a unique workforce: well-educated, highly experienced, and hardworking. For years, salaries more or less stagnated as Massachusetts employers benefited from a large pool of underemployed and unemployed talent. In that tough, employer-driven market, workers who wanted to learn new skills or seek a better credential typically chose to go back to school and earn a graduate degree.

In the past few years, as the pool of workers was tightening, New Jobs wondered just how much impact a graduate degree had on salary. Did it have more value than work experience? Or would those struggling workers be better off gaining skills in a different way?

To increase your salary in Massachusetts, do you need more hands-on experience or classroom education?

In November 2018, New Jobs published its analysis of the effect of education and work experience, [Which is More Valuable—Education or Work Experience?](#) The results were startling. For the state's employees as a whole, the salary value of work experience contributes eight times as much to their salary as education does. And that disparity grows over time. The study calculated that the salary value of education declines rapidly after graduation, falling by 50 percent every 3.5 years.

What changed?

In short, the job market has evolved.

Since 2016, the Massachusetts workforce has benefited from higher utilization as measured by lower unemployment rates. It no longer makes economic sense for **individuals** who want to gain new skills and increase their

pay to **stop** work, **pay** to obtain a graduate degree, then **return** to work and try to **recover** their costs while **hoping** their employer chooses to reward them for their scholarly efforts.

Correspondingly, **employers** are finding that requiring advanced degrees shrinks the pool of qualified candidates for their open positions. Add to this the fact that work experience preferentially helps their new hires be more successful and productive, and the value of the advanced degree falls even further.

It's all about your skills.

In 2019, New Jobs decided to put its [earlier research](#) to the test. We specifically sought **current salary information for actual job openings in the current employment market in the Commonwealth.**

To analyze an occupation typical of Massachusetts' diverse and advanced occupational mix, New Jobs chose the information technology (IT) field. The IT market for programmers, web developers, and other data-management pro-

fessionals is similar to numerous other occupations in the Commonwealth that require a mix of education and technical experience. Notable examples are medical research and development, finance and investing, engineering, the natural sciences, business operations, and technical problem-solving services in many disciplines.

We could not find any prior research that analyzed the sources of value-added that affect salary and wages for Massachusetts—or any other state—so New Jobs decided to assemble its own estimating system to answer the question. You can read a detailed account of our methodology [here](#).

What we found out.

The results show that, while a Bachelor's degree will get your foot in the

door, its impact on your earning wanes over time. After that, salary gains are all about the hands-on skills you bring to the table.

New Jobs' interpretation of our research is that for the first five years in the IT field after receiving a

You will earn eight times more income from gaining more experience than from attaining another degree.

Bachelor's degree, both the degree and growing work experience create salary value. It's clear that education adds salary value right out of school and continues to do so for a handful of years.

However, beginning at the five-year mark and continuing throughout an individual's career, one's increase in salary in the IT field is driven solely by work experience, while the incremental value of the undergrad degree has dropped to virtually zero. **After five years' experience, work experience exclusively determines increases in salary.**

Education likely helps qualitatively, for instance, in getting hired, supervising, managing, and solving problems more effectively. But salary gains come from one's work experience.

After five years, this study shows employees have validated themselves enough that their education doesn't create additional pay. To improve their compensation, employees need to broaden and diversify their work experience. That includes developing managerial

experience like project management and certification, domain experience with cloud computing, big data, IT architecture, and the Linux operating system, and commercial experience such as consulting or client relations.

As for employers considering technical individuals with more than

To improve their compensation, employees should ask for more hands-on responsibility beyond their current assignments.

five years' experience and effective job performance, there's no reason to limit their pool of qualified candi-

dates based solely on their degree.

At the speed that the information technology sector changes, it doesn't make sense to boost salary compensation in exchange for what was learned in a classroom 15, 10, or even 5 years earlier. ###

To see a summary of New Jobs;' methodology, click <https://www.newmassjobs.com/our-research>

Find the 2018 report on statewide salary production at the same link.

Summary of New Jobs' Research Methodology

1. We used an **automated search algorithm** to pull **19,245 job-opening posts** from the well-known job website **Indeed.com** from February 8, 2019, to April 6, 2019 using 42 terms of in-demand IT jobs such as data scientist, network architect, Java developer, and text mining.
2. We cleaned the data by retaining only posts with a stated **salary**, a **Mass location**, and clear requirements for **experience** and **education**.
3. The remaining 606 posts we converted to **yes-no variables** for **education** levels and the presence of over 100 commonly sought IT work **skills**, such as SQL, AWS, Python, and data security.
4. Requirements for **work experience** were converted to **yes-no variables** at the midpoints of annual ranges; 1-2 years became 1.5 years.
5. We assembled alternate **regression formulas** that would “explain” salary offers by assigning weights and confidence scores to each variable.
6. Our formula **predicted salary values** for IT offers calling for a mix of 30 different skills; the most popular skills, all with 100 percent confidence, were Machine Learning at \$17,750, Cloud Computing at \$33,330, and Big Data at \$22,750. Even number 27 in reliability, the programming language Ruby, produced salary value of \$22,010 with 92.9 percent confidence.
7. Some common skills produced a **negative salary value**; SAAS (Software As A Service) produced \$-16,030, suggesting SAAS is a skill possibly less in demand, oversupplied, or out of favor, hence less well paid.
8. The formula was able to show that the salary value of five years' experience and **no** bachelor's degree is just as great as the salary value from five years' work experience **with** a bachelor's degree, meaning that **from five years on, virtually all salary gain is driven by work experience**.

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To review the methodology behind this research, with more detailed findings, please click to <https://www.newmassjobs.com/our-research>