

## ECONOMY

# Employers Aren't Just Whining – the “Skills Gap” Is Real

by James Bessen

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Every year, the Manpower Group, a human resources consultancy, conducts a worldwide “Talent Shortage Survey.” Last year, 35% of 38,000 employers reported difficulty filling jobs due to lack of available talent; in the U.S., 39% of employers did. But the idea of a “skills gap” as identified in this and other surveys has been widely criticized. Peter Cappelli asks whether these studies are just a sign of “employer whining;” Paul Krugman calls the skills gap a “zombie idea” that “that should have been killed by evidence, but refuses to die.” The New York Times asserts that it is “mostly a corporate fiction, based in part on self-interest and a misreading of government data.” According to the Times, the survey responses are an effort by executives to get “the government to take on more of the costs of training workers.”

Really? A worldwide scheme by thousands of business managers to manipulate public opinion seems far-fetched. Perhaps the simpler explanation is the better one: many employers might actually have difficulty hiring skilled workers. The critics cite economic evidence to argue that there are no major shortages of skilled workers. But a closer look shows that their evidence is mostly irrelevant. The issue is confusing because the skills required to work with new technologies are hard to measure. They are even harder to manage. Understanding this controversy sheds some light on what employers and government need to do to deal with a very real problem.

This issue has become controversial because people mean different things by “skills gap.” Some public officials have sought to blame persistent unemployment on skill shortages. I am not suggesting any major link between the supply of skilled workers and today’s unemployment; there is little evidence to support such an interpretation. Indeed, employers reported difficulty hiring skilled workers *before* the recession. This illustrates one source of confusion in the debate over the existence of a skills gap: distinguishing between the short and long term. Today’s unemployment is largely a cyclical matter, caused by the recession and best addressed by macroeconomic policy. Yet although skills are not a major contributor to today’s unemployment, the longer-term issue of worker skills is important both for managers and for policy.

Nor is the skills gap primarily a problem of schooling. Peter Cappelli reviews the evidence to conclude that there are not major shortages of workers with basic reading and math skills or of workers with engineering and technical training; if anything, too many workers may be overeducated. Nevertheless, employers still have real difficulties hiring workers with the skills to deal with new technologies.

Why are skills sometimes hard to measure and to manage? Because new technologies frequently require specific new skills that schools don’t teach and that labor markets don’t supply. Since information technologies have radically changed much work over the last couple of decades, employers have had persistent difficulty finding workers who can make the most of these new technologies.

Consider, for example, graphic designers. Until recently, almost all graphic designers designed for print. Then came the Internet and demand grew for web designers. Then came smartphones and demand grew for mobile designers. Designers had to keep up with new technologies and new standards that are still changing rapidly. A few years ago they needed to

know Flash; now they need to know HTML5 instead. New specialties emerged such as user-interaction specialists and information architects. At the same time, business models in publishing have changed rapidly.

Graphic arts schools have had difficulty keeping up. Much of what they teach becomes obsolete quickly and most are still oriented to print design in any case. Instead, designers have to learn on the job, so experience matters. But employers can't easily evaluate prospective new hires just based on years of experience. Not every designer can learn well on the job and often what they learn might be specific to their particular employer.

The labor market for web and mobile designers faces a kind of Catch-22: without certified standard skills, learning on the job matters but employers have a hard time knowing whom to hire and whose experience is valuable; and employees have limited incentives to put time and effort into learning on the job if they are uncertain about the future prospects of the particular version of technology their employer uses. Workers will more likely invest when standardized skills promise them a secure career path with reliably good wages in the future.

Under these conditions, employers do, have a hard time finding workers with the latest design skills. When new technologies come into play, simple textbook notions about skills can be misleading for both managers and economists.

For one thing, education does not measure technical skills. A graphic designer with a bachelor's degree does not necessarily have the skills to work on a web development team. Some economists argue that there is no shortage of employees with the basic skills in reading, writing and math to meet the requirements of today's jobs. But those aren't the skills in short supply.

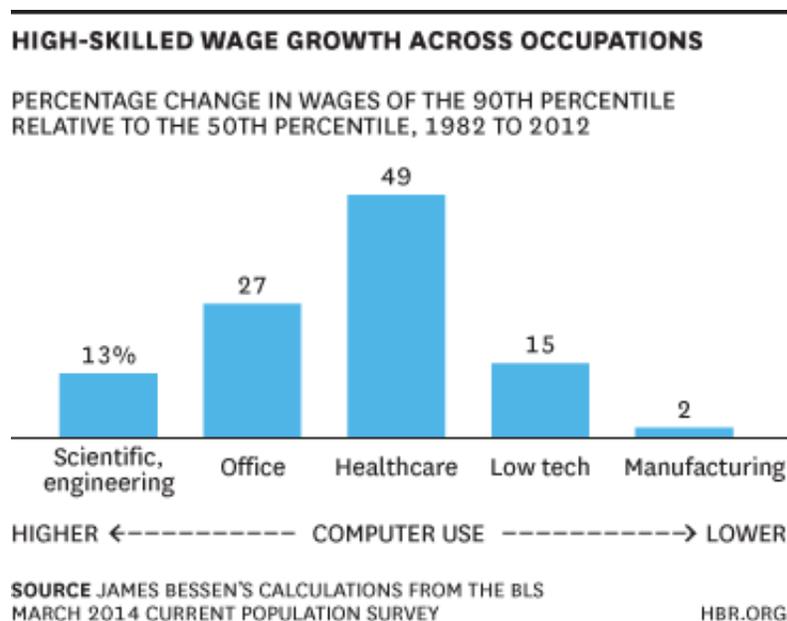
Other critics look at wages for evidence. Times editors tell us “If a business really needed workers, it would pay up.” Gary Burtless at the Brookings Institution puts it more bluntly: “Unless managers have forgotten everything they learned in Econ 101, they should recognize that one way to fill a vacancy is to offer qualified job seekers a compelling reason to take the job” by offering better pay or benefits. Since Burtless finds that the median wage is not increasing, he concludes that there is no shortage of skilled workers.

But that’s not quite right. The wages of the median worker tell us only that the skills of the *median worker* aren’t in short supply; other workers could still have skills in high demand. Technology doesn’t make all workers’ skills more valuable; some skills become valuable, but others go obsolete. Wages should only go up for those particular groups of workers who have highly demanded skills. Some economists observe wages in major occupational groups or by state or metropolitan area to conclude that there are no major skill shortages. But these broad categories don’t correspond to worker skills either, so this evidence is also not compelling.

To the contrary, there is evidence that select groups of workers have been had sustained wage growth, implying persistent skill shortages. Some specific occupations such as nursing do show sustained wage growth and employment growth over a couple decades. And there is more general evidence of rising pay for skills *within* many occupations. Because many new skills are learned on the job, not all workers within an occupation acquire them. For example, the average designer, who typically does print design, does not have good web and mobile platform skills. Not surprisingly, the wages of the average designer have not gone up. However, those designers who have acquired the critical skills, often by teaching themselves on the job, command six figure salaries or \$90 to \$100 per hour rates as freelancers. The wages of the top 10% of designers *have* risen strongly; the wages of the average designer have not. There is a shortage of skilled designers but it can only be seen in the wages of those designers who have managed to master new technologies.

This trend is more general. We see it in the high pay that software developers in Silicon Valley receive for their specialized skills. And we see it throughout the workforce. Research shows that since the 1980s, the wages of the top 10% of workers has risen sharply relative to the median wage earner after controlling for observable characteristics such as education and experience. Some workers have indeed benefited from skills that are apparently in short supply; it's just that these skills are not captured by the crude statistical categories that economists have at hand.

And these skills appear to be related to new technology, in particular, to information technologies. The chart shows how the wages of the 90th percentile increased relative to the wages of the 50th percentile in different groups of occupations. The occupational groups are organized in order of declining computer use and the changes are measured from 1982 to 2012. Occupations affected by office computing and the Internet (69% of these workers use computers) and healthcare (55% of these workers use computers) show the greatest relative wage growth for the 90th percentile. Millions of workers within these occupations appear to have valuable specialized skills that are in short supply and have seen their wages grow dramatically.



This evidence shows that we should not be too quick to discard employer claims about hiring skilled talent. Most managers don't need remedial Econ 101; the overly simple models of Econ 101 just don't tell us much about real world skills and technology. The evidence highlights instead just how difficult it is to measure worker skills, especially those relating to new technology.

What is hard to measure is often hard to manage. Employers using new technologies need to base hiring decisions not just on education, but also on the non-cognitive skills that allow some people to excel at learning on the job; they need to design pay structures to retain workers who do learn, yet not to encumber employee mobility and knowledge sharing, which are often key to informal learning; and they need to design business models that enable workers to learn effectively on the job (see this example). Policy makers also need to think differently about skills, encouraging, for example, industry certification programs for new skills and partnerships between community colleges and local employers.

Although it is difficult for workers and employers to develop these new skills, this difficulty creates opportunity. Those workers who acquire the latest skills earn good pay; those employers who hire the right workers and train them well can realize the competitive advantages that come with new technologies.

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**Mr Anonymous** 2 months ago

This is nonsense ... there are plenty of skilled people in circulation. I don;t mean to disregard the needs and concerns of a business owner but there should be some give to get. Employers can invest time to train people instead of selfishly expecting anyone to walk in the door and immediately dovetail the role of employee.

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