# Tech's push to teach coding isn't about kids' success – it's about cutting wages

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Today's hi-tech wages threaten Silicon Valley's bottom line. What better way to drive down coders' pay than by investing in a new generation of cheap labor?

Thu 21 Sep 2017 12.33 EDT



This month, millions of children returned to school. This year, an unprecedented number of them will learn to code.

Computer science courses for children have proliferated rapidly in the past few years. A 2016 Gallup report found that 40% of American schools now offer coding classes – up from only 25% a few years ago. New York, with the largest public school system in the country, has pledged to offer computer science to all 1.1 million students by 2025. Los Angeles, with the second largest, plans to do the same by 2020. And Chicago, the fourth largest, has gone further, promising to make computer science a high school graduation requirement by 2018.

The rationale for this rapid curricular renovation is economic. Teaching kids how to code will help them land good jobs, the argument goes. In an era of flat and falling incomes, programming provides a new path to the middle class - a skill so widely demanded that anyone who acquires it can command a livable, even lucrative, wage.

This narrative pervades policymaking at every level, from school boards to the government. Yet it rests on a fundamentally flawed premise. Contrary to public perception, the economy doesn't actually need that many more programmers. As a result, teaching millions of kids to code won't make them all middle-class. Rather, it will proletarianize the profession by flooding the market and forcing wages down - and that's precisely the point.

At its root, the campaign for code education isn't about giving the next generation a shot at earning the salary of a Facebook engineer. It's about ensuring those salaries no longer exist, by creating a source of cheap labor for the tech industry.

As software mediates more of our lives, and the power of Silicon Valley grows, it's tempting to imagine that demand for developers is soaring. The media contributes to this impression by spotlighting the genuinely inspiring stories of those who have ascended the class ladder through code. You may have heard of Bit Source, a company in eastern Kentucky that retrains coalminers as coders. They've been featured by Wired, Forbes, FastCompany, The Guardian, NPR and NBC News, among others.

A former coalminer who becomes a successful developer deserves our respect and admiration. But the data suggests that relatively few will be able to follow their example. Our educational system has long been producing more programmers than the labor market can absorb. A study by the Economic Policy Institute found that the supply of American college graduates with computer science degrees is 50% greater than the number hired into the tech industry each year. For all the talk of a tech worker shortage, many qualified graduates simply can't find jobs.

More tellingly, wage levels in the tech industry have remained flat since the late 1990s. Adjusting for inflation, the average programmer earns about as much today as in 1998. If demand were soaring, you'd expect wages to rise sharply in response. Instead, salaries have stagnated.

Still, those salaries are stagnating at a fairly high level. The Department of Labor estimates that the median annual wage for computer and information technology occupations is $82,860 - more than twice the national average. And from the perspective of the people who own the tech industry, this presents a problem. High wages threaten profits. To maximize profitability, one must always be finding ways to pay workers less.

Tech executives have pursued this goal in a variety of ways. One is collusion - companies conspiring to prevent their employees from earning more by switching jobs. The prevalence of this practice in Silicon Valley triggered a justice department antitrust complaint in 2010, along with a class action suit that culminated in a $415m settlement. Another, more sophisticated method is importing large numbers of skilled guest workers from other countries through the H1-B visa program. These workers earn less than their American counterparts, and possess little bargaining power because they must remain employed to keep their status.

Guest workers and wage-fixing are useful tools for restraining labor costs. But nothing would make programming cheaper than making millions more programmers. And where better to develop this workforce than America's schools? It's no coincidence, then, that the campaign for

code education is being orchestrated by the tech industry itself. Its primary instrument is Code.org, a nonprofit funded by Facebook, Microsoft, Google and others. In 2016, the organization spent nearly $20m on training teachers, developing curricula, and lobbying policymakers.

Silicon Valley has been unusually successful in persuading our political class and much of the general public that its interests coincide with the interests of humanity as a whole. But tech is an industry like any other. It prioritizes its bottom line, and invests heavily in making public policy serve it. The five largest tech firms now spend twice as much as Wall Street on lobbying Washington – nearly $50m in 2016. The biggest spender, Google, also goes to considerable lengths to cultivate policy wonks favorable to its interests – and to discipline the ones who aren't.

Silicon Valley is not a uniquely benevolent force, nor a uniquely malevolent one. Rather, it's something more ordinary: a collection of capitalist firms committed to the pursuit of profit. And as every capitalist knows, markets are figments of politics. They are not naturally occurring phenomena, but elaborately crafted contraptions, sustained and structured by the state – which is why shaping public policy is so important. If tech works tirelessly to tilt markets in its favor, it's hardly alone. What distinguishes it is the amount of money it has at its disposal to do so.

Money isn't Silicon Valley's only advantage in its crusade to remake American education, however. It also enjoys a favorable ideological climate. Its basic message – that schools alone can fix big social problems – is one that politicians of both parties have been repeating for years. The far-fetched premise of neoliberal school reform is that education can mend our disintegrating social fabric. That if we teach students the right skills, we can solve poverty, inequality and stagnation. The school becomes an engine of economic transformation, catapulting young people from challenging circumstances into dignified, comfortable lives.

This argument is immensely pleasing to the technocratic mind. It suggests that our core economic malfunction is *technical* – a simple asymmetry. You have workers on one side and good jobs on the other, and all it takes is training to match them up. Indeed, every president since Bill Clinton has talked about training American workers to fill the "skills gap". But gradually, one mainstream economist after another has come to realize what most workers have known for years: the gap doesn't exist. Even Larry Summers has concluded it's a myth.

The problem isn't training. The problem is there aren't enough good jobs to be trained *for*. The solution is to make bad jobs better, by raising the minimum wage and making it easier for workers to form a union, and to create more good jobs by investing for growth. This involves forcing business to put money into things that actually grow the productive economy rather than shoveling profits out to shareholders. It also means increasing public investment, so that people can make a decent living doing socially necessary work like decarbonizing our energy system and restoring our decaying infrastructure.

Everyone should have the opportunity to learn how to code. Coding can be a rewarding, even pleasurable, experience, and it's useful for performing all sorts of tasks. More broadly, an understanding of how code works is critical for basic digital literacy – something that is swiftly becoming a requirement for informed citizenship in an increasingly technologized world.

But coding is not magic. It is a technical skill, akin to carpentry. Learning to build software does not make you any more immune to the forces of American capitalism than learning to build a

house. Whether a coder or a carpenter, capital will do what it can to lower your wages, and enlist public institutions towards that end.

Silicon Valley has been extraordinarily adept at converting previously uncommodified portions of our common life into sources of profit. Our schools may prove an easy conquest by comparison.

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