



Education and Income: How Learning Boosts Salary

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The U.S. is in the midst of an [economic downturn](#) resulting from COVID-19, with potential long lasting effects on workers and the American labor market. [Unemployment](#) is at its highest point since the Great Depression with over [44.2 million Americans](#) filing for benefits. Despite massive government assistance, fiscal recovery will be a daunting process, requiring innovative solutions.

The United States must consider new strategies to fortify its labor market. Major investments are necessary from the federal government to boost the American economy. For there to be any chance of recovery in the coming years, states and the federal government would be wise to invest funds in training and education.

More spending on schools may sound at first counterintuitive. After all, many states are [cutting back](#) on public services to balance budgets. Funding is being slashed for education in many areas. Ohio recently [slashed funding](#) by \$775 million, targeting education. Georgia, for instance, cut spending by 14 percent for all state agencies, including schools. Yet it cannot be understated: education and retraining in key skills are instrumental to a competitive labor force and national economy.

For over 60 years, economists have demonstrated how education leads directly to major [economic returns](#) in salary and GDP. Education additionally plays a vital role in many countries' [economies](#), as well as the general health of [labor markets](#) and overall employment. Indeed, [employment](#) tends to go in lock step with increasing education standards. This is true both for individuals and large economies.

Graduating with a high school diploma is equivalent to an additional almost \$7,000 in annual salary.

In other words, budget cuts for American public schools will only deepen the economic and unemployment crisis already underway. In contrast, by investing in education outcomes for the future American workforce, there is a real possibility to reverse the negative downturn.

It is worth considering the current state of public education in 2020 thus far. In addition to skyrocketing unemployment, COVID-19 has caused school closures for [60 percent of the global student population](#). While young people around the globe are shifting to online learning, this unprecedented challenge has increased precarity for those living in resource-stricken areas—or for those without access to computers or Internet connections.

In the U.S., while the majority of students may have access to online learning, nearly half of middle school and high school students report [not tuning in](#) to newly web-based courses. Others may opt out of class due to obligations to instruct their younger siblings and relatives, who are also stuck at home. [Negative effects](#) have already been visible in interrupted learning, and reduced opportunities for economically disadvantaged students.

There is hope however. When a country's education system improves, [labor force](#) skills increase and incomes rise. Boosting the American education system, then, presents a key opportunity for a robust recovery for both policymakers and individuals. To better understand the benefits of educational investments, the Learning Agency conducted a study to look at how Americans' incomes would grow as a result of better skills and education.

Better math skills can increase salary by \$21,000 per year.

The approach for this economic white paper draws from a 2015 National Bureau of Economic Research (NBER) [study](#), "Returns to Skills around the World: Evidence from PIAAC." In that paper, the NBER demonstrated workers could expect impressive percentage increases from relatively nominal increases in skills through education. Improved math skills, for instance, led in theory to a 28 percent increase in wages, while improved reading skills in education would produce a 27 percent improvement in wages.

For the Learning Agency’s analysis, NBER’s percentages were translated into an exact numeric wage increase per year, based on current employment statistics, and wage estimates. That is to say, we calculated the increase in monetary gains created by developing further math and reading skills.

Findings. The study’s findings are as follows:

Better math skills can increase salary by \$21,000 per year.

If a student had improved reasoning ability with data, statistics, graphs, and spatial relationships — as measured by a standardized exam — the total expected increase in earnings would be an additional \$21,000 per year for an 35-54 year old, full-time U.S. worker. The total accrued amount in earnings for an individual for better math skills over two decades would be \$400,000.

The analysis only included careers requiring at least a high school-level of math knowledge, such as financial operations, computers, engineering, the sciences, healthcare, manufacturing, management, and administration. In California, further education in math would lead to a \$25,000 yearly increase in wages, or \$31,000 in Washington D.C. In New York, over a 20 year period, the increase in income would come close to \$500,000.

Note that the analysis assumes a single standard deviation increase in math scores. This is the [equivalent of a 200 point increase](#) in SAT scores.

Improvement in reading and writing skills could spark an \$11,000 increase in annual salary.

This estimated and approximate \$11,000 in individual gains would aggregate to a \$421 billion increase in wages annually for the U.S. workforce as a whole, with a boost of \$8.4 trillion over 20 years. While most workers already have basic reading and writing abilities, improved reading and writing skills lead to a substantial increase in wages.

Though the numbers for gains from reading skills were not as impressive in total as those from increasing math skills, the foreseeable impact would be wider, since more Americans work in fields where reading and writing are a necessity, and a wider variety of professions stand to benefit.

As part of the analysis, we considered all full-time workers in the U.S. Again, the analysis assumes a single standard deviation increase in reading and writing scores. This is the equivalent of a 200 point increase in SAT scores.

Graduating with a high school diploma is equivalent to an additional almost \$7,000 in annual salary.

In the final component of this analysis, we found similarly impressive wage increases for the value of completing a high school diploma. The basis of this calculation was Census Bureau's 2018 American Community Survey data. According to the data, workers currently without high school diplomas stand to earn an additional \$6,700 per year if they completed their degree, as compared to the earnings of non-high school graduates.

The takeaway is that workers without degrees who currently earn on average \$24,500 per year, would increase their salaries to \$31,300 annually. If half of all adults 25 and over, who did not graduate from high school, finished their degrees, the earnings would accrue to \$88 billion in increased annual income nationally. Over 20 years, this increase would be a boost of \$1.8 trillion in wages for the American economy.

Improvement in reading and writing skills spark an \$11,000 increase in annual salary.

National and state-level economic impact of increased learning is more than \$200 billion.

It is clear that not only workers stand to benefit economically from a boost in educational outcomes since wages form the basis of the economy, and so we analyzed the overall impact of salary increases.

According to our estimates, about 11 million workers in the U.S. would benefit from improved math skills, and their additional earnings would total \$235 billion annually. Ultimately, the U.S. could expect a \$235 billion increase for the national economy per year, by only improving math education. During a 20 year period that amount would amass to \$4.7 trillion. Keep in mind, this analysis was relatively conservative, examining only the case of full-time adult workers, in the midst of their careers.

Methodology.

The original study undertaken by the NBER assumed a single standard deviation in test performance. A single standard deviation is equal to a 200 point increase in SAT scores.

In the context of the study, we made the further necessary assumption that all current wages for the American workforce would increase in exact proportion to increases in level of education.

This assumption does not account for the likelihood of diminishing returns, even in the case that the population's level of education magically increased. The improvement of education outcomes would likely not affect all salaries at the same level.

Economic returns for a completed high school diploma were calculated with a straightforward model: by estimating the boost non-high school graduates would receive if paid according to the earnings of workers who graduated high school, compared to current income. For this analysis, we looked at workers aged 25 years and over.

The total accrued amount in earnings for an individual for better math skills over two decades would be \$400,000.

More exactly, we looked at full-time workers aged 35 to 54 for the cognitive skills analysis since NBER generated their findings with this population.

For the purposes of the study, 83 percent of the workforce were [estimated](#) to have full-time jobs, and 31 percent of that number are expected to be between 35 and 54.

Approximately 3 in 10 U.S. workers have a profession in the STEM (Science, Technology, Engineering and Mathematics) fields, where workers earn on average \$36,000 more, on a yearly basis, than their counterparts in non-STEM professions. In certain states, gains in wages according to improved math skills were more noteworthy. Nonetheless the implications of this study are optimistic for the American economy caught in the midst of a downturn from the global pandemic.

Discussion.

Simply put, more education leads to much more income. What's more, an improvement in education would help kickstart the American economy. Schools are the primary environments in which people develop cognitive skills, and research shows countries with improved cognitive skills over time [experience faster rates](#) of economic growth. This boost is due to the impact of cognitive skills on an individual's earnings.

To put it more exactly, better-skilled workers are more equipped to manage a range of situations in their work environment, improve their technical and domain expertise, and strive for higher positions within their current place of employment and elsewhere. Cognitive skills also improve a worker's efficiency and productivity, making them more attractive to employers.

Over 20 years, this increase would be a boost of \$1.8 trillion in wages for the American economy.

More educated workers can also compete more effectively for high-paying and high-skilled jobs. In other words, the more knowledge someone has, the more effective they are finding work. The nation currently faces a shortage of skilled labor in a number of technical areas including machine learning and data science.

To be sure, improvements in education are not easy. In fact, the [dropout rate](#) between grades 10 and 12 even increased from 2007 (3.5 percent) to 2017 (5.4 percent). Similarly, math and reading performance have also [declined in recent years](#) among fourth- and eighth-grade students, according to the latest data from the National Assessment of Educational Progress, also known as the “Nation’s Report Card.” Not surprisingly, this means that U.S. education achievement generally has [lagged behind](#) that of other countries, coming in 30th in global comparative math assessment.

Recommendations. Our analysis leads us to the following recommendations:

Boost funding for education.

Budget cuts are undermining public education. Too many states and local agencies are cutting funds for schools, and today most states are [spending less](#) on education than they did a decade prior.

This is short sighted. Lower spending levels lead to lower results. After the Great Recession, a 10 percent cut in school spending was shown to [reduce](#) NAEP test scores by 7.8 percent, and graduation rates by 2.6 percent. Similarly, greater spending leads to greater results. Court orders for increased per pupil spending have been proven to produce higher graduation rates, as just one [example](#).

The issue goes beyond overall spending. The nation’s education system is marred by extreme inequities, and the wealthiest districts in America spend [10 times more](#) on education than the poorest. Students in Mississippi for instance generally have [40 percent](#) of the per-pupil funding available for school kids in New Jersey, while Alabama students get about 50 percent of the funding available to students in Connecticut. Increased [spending](#) means not only a better academic environment but also often improved health, nutrition and emotional support – which in turn affect students’ ability to succeed.

The point is education requires investment. Improved funding will improve outcomes, and given the pandemic, policy leaders should invest — not cut — school funding.

Invest in what works to boost outcomes for students.

School funding efforts are not all equal. Some expenditures improve education more than others. This leads to our next recommendation: Policymakers should invest in programs that work and raise outcomes for children as well as create systems to further understand what works.

Randomized control trials have demonstrated that [early childhood education](#) produces real results. Research has also shown that investments in thoughtful ed tech programs like [ASSISTments](#) can make a difference. There's also a wealth of evidence around focused school reform programs like Success for All. These are the types of programs that require additional investments and scale.

One of the most promising and evidence-based reforms is tutoring. Online tutoring can help low-performing students catch up, according to several studies. What's more, tutoring programs can also put people back to work. In this case, tutoring programs can employ twenty-somethings who are not returning to college or the many people who have been laid off from work due to the pandemic.

Policymakers should also look to support programs that create a “virtuous cycle” of evidence, creating infrastructure that allows for richer research. The ASSISTments program, for instance, has opened up its backend to allow for additional research. This “instrumentation” approach could lay the groundwork for major improvements in students’ learning and should be expanded.

Conclusion.

Education plays [a decisive role](#) in economic performance. Those in society with more education earn [higher salaries](#) over their lifetime as well as contribute more in taxes. An educated population also leads to economic growth at a national level. Better education has even been shown to create [more cohesion](#) in democratic countries and a heightened sense of trust between citizens.

In this regard, increased funds for public education generate a positive feedback loop for the economy. As education improves the economy improves, and as the economy improves education improves even more. In some countries, education has become the [driving force](#) of the economy.

In the coming years, there is a threat not only of COVID-19 but a high likelihood that what's known as "Industry 4.0" will make [many jobs obsolete](#) through automation. Improving skills through education will be key for the U.S. workforce to survive despite these dramatic trends.

This analysis is a call to individuals, who should continue to focus on improving their knowledge and skills. It's just as important a call to policymakers to improve U.S. education in order to rebuild the economy. The study shows that every state would see a dramatic increase in outcomes due to more education. Similarly, virtually every area of economic activity in America stands to benefit from greater investment in education. The nation must act now and reinvest in its future.

The table below reveals national and state findings on individual gains, resulting from improved math skills.

Table 1: Individual Wage Increases due to Improved Math Skills				
<i>Maximum current and projected annual earnings for adult STEM workers due to a one standard deviation increase in math skills, by area</i>				
Area	Current Gross Yearly Wages	Projected Gross Yearly Wages	Projected 1-Year Increase in Gross Wages	Projected 20-Year Increase in Gross Wages
United States	\$75,157	\$96,201	\$21,044	\$420,878
Alabama	\$66,547	\$85,180	\$18,633	\$372,664
Alaska	\$79,417	\$101,654	\$22,237	\$444,738
Arizona	\$70,527	\$90,275	\$19,748	\$394,952
Arkansas	\$58,411	\$74,766	\$16,355	\$327,100
California	\$90,356	\$115,656	\$25,300	\$505,996
Colorado	\$79,968	\$102,359	\$22,391	\$447,822
Connecticut	\$87,120	\$111,513	\$24,394	\$487,870
Delaware	\$80,138	\$102,577	\$22,439	\$448,772
District of Columbia	\$112,246	\$143,674	\$31,429	\$628,575
Florida	\$66,014	\$84,498	\$18,484	\$369,677
Georgia	\$72,014	\$92,178	\$20,164	\$403,278
Guam	\$51,846	\$66,362	\$14,517	\$290,336
Hawaii	\$75,152	\$96,195	\$21,043	\$420,854
Idaho	\$61,163	\$78,288	\$17,126	\$342,511
Illinois	\$75,677	\$96,866	\$21,190	\$423,791
Indiana	\$63,986	\$81,902	\$17,916	\$358,323
Iowa	\$63,783	\$81,642	\$17,859	\$357,183
Kansas	\$62,985	\$80,621	\$17,636	\$352,715
Kentucky	\$61,955	\$79,302	\$17,347	\$346,948
Louisiana	\$60,478	\$77,412	\$16,934	\$338,680
Maine	\$65,905	\$84,359	\$18,453	\$369,070
Maryland	\$85,857	\$109,897	\$24,040	\$480,800
Massachusetts	\$88,583	\$113,387	\$24,803	\$496,067
Michigan	\$71,764	\$91,858	\$20,094	\$401,878

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Minnesota	\$77,184	\$98,795	\$21,612	\$432,230
Mississippi	\$55,791	\$71,412	\$15,621	\$312,428
Missouri	\$65,239	\$83,506	\$18,267	\$365,339
Montana	\$59,746	\$76,474	\$16,729	\$334,575
Nebraska	\$66,528	\$85,156	\$18,628	\$372,559
Nevada	\$73,697	\$94,332	\$20,635	\$412,701
New Hampshire	\$75,852	\$97,090	\$21,238	\$424,770
New Jersey	\$87,927	\$112,547	\$24,620	\$492,394
New Mexico	\$67,827	\$86,819	\$18,992	\$379,834
New York	\$88,023	\$112,669	\$24,646	\$492,928
North Carolina	\$69,957	\$89,545	\$19,588	\$391,760
North Dakota	\$64,960	\$83,149	\$18,189	\$363,776
Ohio	\$69,375	\$88,801	\$19,425	\$388,502
Oklahoma	\$61,978	\$79,332	\$17,354	\$347,076
Oregon	\$75,908	\$97,163	\$21,254	\$425,086
Pennsylvania	\$73,895	\$94,585	\$20,691	\$413,811
Puerto Rico	\$38,640	\$49,459	\$10,819	\$216,385
Rhode Island	\$83,340	\$106,675	\$23,335	\$466,702
South Carolina	\$64,940	\$83,123	\$18,183	\$363,664
South Dakota	\$59,246	\$75,835	\$16,589	\$331,778
Tennessee	\$63,786	\$81,646	\$17,860	\$357,203
Texas	\$73,836	\$94,511	\$20,674	\$413,484
Utah	\$64,938	\$83,120	\$18,183	\$363,652
Vermont	\$64,941	\$83,125	\$18,184	\$363,671
Virgin Islands	\$59,483	\$76,139	\$16,655	\$333,108
Virginia	\$82,313	\$105,361	\$23,048	\$460,954
Washington	\$86,461	\$110,670	\$24,209	\$484,183
West Virginia	\$57,930	\$74,150	\$16,220	\$324,407
Wisconsin	\$68,496	\$87,674	\$19,179	\$383,575
Wyoming	\$64,477	\$82,531	\$18,054	\$361,072

Note: Researchers restricted worker population to occupations classified as Science, Technology, Engineering, and Mathematics (STEM) or as requiring significant math skills.
Sources: Bureau of Labor Statistics, May 2019 National, State, Metropolitan, and Nonmetropolitan Area Occupational Employment and Wage Estimates.

The table below demonstrates possible state and national economic gains as a result of improving math skills.

Table 2: State and National Income Gains due to Improved Math Skills					
<i>Current and projected aggregate earnings due to a one standard deviation increase in math skills, by U.S. jurisdiction (in millions).</i>					
Area	Number of Prime-Age, Full-Time Workers in Math-Intensive Occupations	Current Gross Yearly Wages	Projected Gross Yearly Wages	Projected 1-Year Increase in Gross Yearly Wages	Projected 20-Year Increase in Gross Yearly Wages
United States	11,162,412	\$838,931	\$1,073,832	\$234,900	\$4,698,015
Alabama	130,590	\$8,690	\$11,123	\$2,433	\$48,666
Alaska	24,410	\$1,938	\$2,481	\$542	\$10,856
Arizona	216,014	\$15,234	\$19,500	\$4,265	\$85,314
Arkansas	83,545	\$4,879	\$6,246	\$1,366	\$27,327
California	1,374,319	\$124,178	\$158,948	\$34,770	\$695,400
Colorado	220,578	\$17,639	\$22,578	\$4,938	\$98,779
Connecticut	142,328	\$12,399	\$15,871	\$3,471	\$69,437
Delaware	35,932	\$2,879	\$3,685	\$806	\$16,125
District of Columbia	98,901	\$11,101	\$14,209	\$3,108	\$62,166
Florida	623,659	\$41,170	\$52,697	\$11,527	\$230,552
Georgia	343,261	\$24,719	\$31,641	\$6,921	\$138,429
Hawaii	43,468	\$3,266	\$4,181	\$914	\$18,293
Idaho	51,280	\$3,136	\$4,014	\$878	\$17,563
Illinois	485,283	\$36,724	\$47,007	\$10,282	\$205,658
Indiana	201,430	\$12,888	\$16,497	\$3,608	\$72,176
Iowa	112,198	\$7,156	\$9,160	\$2,003	\$40,075
Kansas	101,736	\$6,407	\$8,202	\$1,794	\$35,883
Kentucky	121,731	\$7,541	\$9,653	\$2,111	\$42,234
Louisiana	129,772	\$7,848	\$10,045	\$2,197	\$43,951
Maine	45,079	\$2,970	\$3,802	\$831	\$16,637
Maryland	245,624	\$21,088	\$26,993	\$5,904	\$118,095
Massachusetts	339,404	\$30,065	\$38,483	\$8,418	\$168,367
Michigan	320,930	\$23,031	\$29,479	\$6,448	\$128,974

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Minnesota	231,290	\$17,851	\$22,850	\$4,998	\$99,970
Mississippi	72,003	\$4,017	\$5,141	\$1,124	\$22,495
Missouri	204,157	\$13,319	\$17,048	\$3,729	\$74,586
Montana	32,739	\$1,956	\$2,503	\$547	\$10,953
Nebraska	72,265	\$4,807	\$6,153	\$1,346	\$26,923
Nevada	76,274	\$5,621	\$7,195	\$1,573	\$31,478
New Hampshire	51,774	\$3,927	\$5,026	\$1,099	\$21,991
New Jersey	328,132	\$28,851	\$36,930	\$8,078	\$161,570
New Mexico	59,701	\$4,049	\$5,183	\$1,133	\$22,676
New York	755,760	\$66,524	\$85,150	\$ 18,626,	\$372,535
North Carolina	326,969	\$22,873	\$29,278	\$6,404	\$128,093
North Dakota	28,468	\$1,849	\$2,367	\$517	\$10,355
Ohio	401,599	\$27,861	\$35,662	\$7,801	\$156,022
Oklahoma	114,357	\$7,087	\$9,072	\$1,984	\$39,690
Oregon	143,416	\$10,886	\$13,934	\$3,048	\$60,964
Pennsylvania	429,629	\$31,747	\$40,636	\$8,889	\$177,785
Rhode Island	38,271	\$3,189	\$4,082	\$893	\$17,861
South Carolina	135,535	\$8,801	\$11,266	\$2,464	\$49,289
South Dakota	27,953	\$1,656	\$2,119	\$463	\$9,274
Tennessee	208,068	\$13,271	\$16,988	\$3,716	\$74,322
Texas	910,307	\$67,213	\$86,033	\$18,819	\$376,396
Utah	120,301	\$7,812	\$9,999	\$2,187	\$43,747
Vermont	25,002	\$1,623	\$2,078	\$454	\$9,092
Virginia	333,734	\$27,470	\$35,162	\$7,691	\$153,835
Washington	273,564	\$23,652	\$30,275	\$6,622	\$132,454
West Virginia	49,407	\$2,862	\$3,663	\$801	\$16,027
Wisconsin	202,441	\$13,866	\$17,748	\$3,882	\$77,651
Wyoming	17,818	\$1,148	\$1,470	\$321	\$6,433

Note: Researchers restricted the full-time working adult population to workers aged 35 to 54 years who worked full-time, year-round. Sources: Bureau of Labor Statistics, May 2019 National, State, Metropolitan, and Nonmetropolitan Area Occupational Employment and Wage Estimates. U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates, "Work Status in the Past 12 Months" Subject Table.

Table 3: Individual Wage Increases due to Improved Reading Skills

Current and projected annual earnings due to a one standard deviation increase in literacy skills, by U.S. jurisdiction

Area	Current Gross Yearly Wages	Projected Gross Yearly Wages	Projected 1-Year Increase in Gross Yearly Wages	Projected 20-Year Increase in Gross Yearly Wages
United States	\$39,810	\$50,957	\$11,147	\$222,936
Alabama	\$34,800	\$44,544	\$9,744	\$194,880
Alaska	\$48,540	\$62,131	\$13,591	\$271,824
Arizona	\$38,410	\$49,165	\$10,755	\$215,096
Arkansas	\$32,940	\$42,163	\$9,223	\$184,464
California	\$44,180	\$56,550	\$12,370	\$247,408
Colorado	\$44,250	\$56,640	\$12,390	\$247,800
Connecticut	\$48,530	\$62,118	\$13,588	\$271,768
Delaware	\$40,900	\$52,352	\$11,452	\$229,040
District of Columbia	\$74,340	\$95,155	\$20,815	\$416,304
Florida	\$35,850	\$45,888	\$10,038	\$200,760
Georgia	\$36,930	\$47,270	\$10,340	\$206,808
Hawaii	\$44,400	\$56,832	\$12,432	\$248,640
Idaho	\$35,360	\$45,261	\$9,901	\$198,016
Illinois	\$41,060	\$52,557	\$11,497	\$229,936
Indiana	\$36,960	\$47,309	\$10,349	\$206,976
Iowa	\$38,280	\$48,998	\$10,718	\$214,368
Kansas	\$37,010	\$47,373	\$10,363	\$207,256
Kentucky	\$35,540	\$45,491	\$9,951	\$199,024
Louisiana	\$34,650	\$44,352	\$9,702	\$194,040
Maine	\$38,370	\$49,114	\$10,744	\$214,872
Maryland	\$45,970	\$58,842	\$12,872	\$257,432
Massachusetts	\$50,200	\$64,256	\$14,056	\$281,120
Michigan	\$38,680	\$49,510	\$10,830	\$216,608
Minnesota	\$44,110	\$56,461	\$12,351	\$247,016
Mississippi	\$31,210	\$39,949	\$8,739	\$174,776
Missouri	\$37,180	\$47,590	\$10,410	\$208,208
Montana	\$36,420	\$46,618	\$10,198	\$203,952

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Nebraska	\$38,390	\$49,139	\$10,749	\$214,984
Nevada	\$36,410	\$46,605	\$10,195	\$203,896
New Hampshire	\$41,490	\$53,107	\$11,617	\$232,344
New Jersey	\$45,000	\$57,600	\$12,600	\$252,000
New Mexico	\$35,420	\$45,338	\$9,918	\$198,352
New York	\$46,680	\$59,750	\$13,070	\$261,408
North Carolina	\$36,910	\$47,245	\$10,335	\$206,696
North Dakota	\$42,510	\$54,413	\$11,903	\$238,056
Ohio	\$38,560	\$49,357	\$10,797	\$215,936
Oklahoma	\$35,730	\$45,734	\$10,004	\$200,088
Oregon	\$41,250	\$52,800	\$11,550	\$231,000
Pennsylvania	\$39,490	\$50,547	\$11,057	\$221,144
Rhode Island	\$44,170	\$56,538	\$12,368	\$247,352
South Carolina	\$34,690	\$44,403	\$9,713	\$194,264
South Dakota	\$34,750	\$44,480	\$9,730	\$194,600
Tennessee	\$35,910	\$45,965	\$10,055	\$201,096
Texas	\$38,010	\$48,653	\$10,643	\$212,856
Utah	\$37,910	\$48,525	\$10,615	\$212,296
Vermont	\$40,920	\$52,378	\$11,458	\$229,152
Virginia	\$42,220	\$54,042	\$11,822	\$236,432
Washington	\$48,140	\$61,619	\$13,479	\$269,584
West Virginia	\$33,920	\$43,418	\$9,498	\$189,952
Wisconsin	\$39,090	\$50,035	\$10,945	\$218,904
Wyoming	\$41,650	\$53,312	\$11,662	\$233,240

Note: Researchers restricted the full-time working adult population to workers aged 35 to 54 years who worked full-time, year-round. Sources: Bureau of Labor Statistics, May 2019 National, State, Metropolitan, and Nonmetropolitan Area Occupational Employment and Wage Estimates. U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates, "Work Status in the Past 12 Months" Subject Table.

The table below shows state and national economic gains due to improved reading skills.

Table 4: State and National Economic Gains due to Improved Reading Skills					
<i>Maximum current and projected aggregate earnings due to a one standard deviation increase in literacy skills, by U.S. jurisdiction (in millions)</i>					
Jurisdiction	Number of Full-Time Workers	Current Gross Yearly Wages	Projected Gross Yearly Wages	1-Year Growth in Gross Yearly Wages	20-Year Growth in Gross Yearly Wages
United States	37,791,061	\$1,504,462	\$1,925,711	\$421,249	\$8,424,987
Alabama	507,954	\$17,676	\$22,626	\$4,949	\$98,990
Alaska	81,587	\$3,960	\$5,069	\$1,108	\$22,177
Arizona	737,633	\$28,332	\$36,265	\$7,933	\$158,661
Arkansas	313,242	\$10,318	\$13,207	\$2,889	\$57,781
California	4,472,492	\$197,594	\$252,921	\$55,326	\$1,106,530
Colorado	689,175	\$30,496	\$39,034	\$8,538	\$170,777
Connecticut	428,430	\$20,791	\$26,613	\$5,821	\$116,433
Delaware	116,274	\$4,755	\$6,087	\$1,331	\$26,631
District of Columbia	186,159	\$13,839	\$17,714	\$3,874	\$77,498
Florida	2,262,709	\$81,118	\$103,831	\$22,713	\$454,261
Georgia	1,150,610	\$42,492	\$54,389	\$11,897	\$237,955
Hawaii	163,514	\$7,260	\$9,292	\$2,032	\$40,656
Idaho	187,098	\$6,615	\$8,468	\$1,852	\$37,048
Illinois	1,550,436	\$63,660	\$81,485	\$17,825	\$356,500
Indiana	790,858	\$29,230	\$37,414	\$8,184	\$163,688
Iowa	398,676	\$15,261	\$19,534	\$4,273	\$85,463
Kansas	358,285	\$13,260	\$16,972	\$3,712	\$74,256
Kentucky	488,072	\$17,346	\$22,202	\$4,856	\$97,138
Louisiana	494,518	\$17,135	\$21,932	\$4,797	\$95,956
Maine	157,254	\$6,033	\$7,723	\$1,689	\$33,789
Maryland	694,970	\$31,947	\$40,893	\$8,945	\$178,907
Massachusetts	931,333	\$46,752	\$59,843	\$13,090	\$261,816
Michigan	1,117,770	\$43,235	\$55,341	\$12,105	\$242,118
Minnesota	741,191	\$32,693	\$41,848	\$9,154	\$183,086
Mississippi	290,306	\$9,060	\$11,597	\$2,536	\$50,738

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Missouri	725,743	\$26,983	\$34,538	\$7,555	\$151,105
Montana	120,416	\$4,385	\$5,613	\$1,227	\$24,559
Nebraska	252,679	\$9,700	\$12,416	\$2,716	\$54,321
Nevada	358,337	\$13,047	\$16,700	\$3,653	\$73,063
New Hampshire	169,942	\$7,050	\$9,025	\$1,974	\$39,484
New Jersey	1,051,830	\$47,332	\$60,585	\$13,253	\$265,061
New Mexico	211,905	\$7,505	\$9,607	\$2,101	\$42,031
New York	2,450,263	\$114,378	\$146,404	\$32,025	\$640,518
North Carolina	1,148,278	\$42,382	\$54,250	\$11,867	\$237,344
North Dakota	108,714	\$4,621	\$5,915	\$1,294	\$25,880
Ohio	1,401,714	\$54,050	\$69,184	\$15,134	\$302,680
Oklahoma	416,154	\$14,869	\$19,032	\$4,163	\$83,267
Oregon	490,378	\$20,228	\$25,891	\$5,663	\$113,277
Pennsylvania	1,518,479	\$59,964	\$76,754	\$16,790	\$335,802
Rhode Island	124,425	\$5,495	\$7,034	\$1,538	\$30,776
South Carolina	542,327	\$18,813	\$24,081	\$5,267	\$105,354
South Dakota	109,389	\$3,801	\$4,865	\$1,064	\$21,287
Tennessee	773,884	\$27,790	\$35,571	\$7,781	\$155,624
Texas	3,198,548	\$121,576	\$155,618	\$34,041	\$680,830
Utah	386,997	\$14,671	\$18,778	\$4,107	\$82,157
Vermont	78,811	\$3,224	\$4,127	\$902	\$18,059
Virginia	998,008	\$42,135	\$53,933	\$11,798	\$235,960
Washington	853,853	\$41,104	\$52,613	\$11,509	\$230,185
West Virginia	180,650	\$6,127	\$7,843	\$1,715	\$34,314
Wisconsin	738,464	\$28,866	\$36,949	\$8,082	\$161,652
Wyoming	70,330	\$2,929	\$3,749	\$820	\$16,403

Note: Researchers restricted the full-time working adult population to workers aged 35 to 54 years who worked full-time, year-round. Sources: Bureau of Labor Statistics, May 2019 National, State, Metropolitan, and Nonmetropolitan Area Occupational Employment and Wage Estimates. U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates, "Work Status in the Past 12 Months" Subject Table.

The table below shows our national and state findings on economic gains due to increased high school completion.

Table 5: Maximum Income Benefits of High School Completion					
Median earnings among workers aged 25 years and over, with and without a high school degree, as well as projected earnings for new high school completers, by jurisdiction					
Jurisdiction	Earnings - 25 years and over, less than a high school graduate	Earnings - 25 years and over, high school graduate	Earnings difference between high school graduates and non-graduates	Population - 25 years and over, less than high school graduate	20-Year Growth in Gross Yearly Wages
United States	\$24,530	\$31,269	\$6,739	26,044,163	\$87,755,807,229
Alabama	\$22,738	\$29,436	\$6,698	448,179	\$1,500,951,471
Alaska	\$25,840	\$35,328	\$9,488	32,444	\$153,914,336
Arizona	\$23,893	\$30,617	\$6,724	605,934	\$2,037,150,108
Arkansas	\$23,899	\$29,805	\$5,906	258,986	\$764,785,658
California	\$24,263	\$31,954	\$7,691	4,355,017	\$16,747,217,874
Colorado	\$29,312	\$35,013	\$5,701	317,116	\$903,939,158
Connecticut	\$25,769	\$35,446	\$9,677	226,254	\$1,094,729,979
Delaware	\$24,961	\$32,173	\$7,212	69,081	\$249,106,086
District of Columbia	\$25,601	\$31,165	\$5,564	39,628	\$110,245,096
Florida	\$22,097	\$27,900	\$5,803	1,761,732	\$5,111,665,398
Georgia	\$23,946	\$30,400	\$6,454	866,099	\$2,794,901,473
Hawaii	\$26,337	\$35,307	\$8,970	80,079	\$359,154,315
Idaho	\$26,050	\$30,790	\$4,740	103,868	\$246,167,160
Illinois	\$26,046	\$31,625	\$5,579	914,782	\$2,551,784,389
Indiana	\$25,560	\$32,171	\$6,611	491,834	\$1,625,757,287
Iowa	\$29,980	\$32,367	\$2,387	162,649	\$194,121,582
Kansas	\$26,462	\$30,792	\$4,330	172,033	\$372,451,445
Kentucky	\$21,639	\$30,213	\$8,574	401,064	\$1,719,361,368
Louisiana	\$21,282	\$29,383	\$8,101	442,559	\$1,792,585,230
Maine	\$25,581	\$30,726	\$5,145	68,461	\$176,115,923
Maryland	\$27,088	\$35,780	\$8,692	396,131	\$1,721,585,326
Massachusetts	\$26,686	\$36,248	\$9,562	446,304	\$2,133,779,424

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Michigan	\$22,405	\$30,274	\$7,869	612,424	\$2,409,582,228
Minnesota	\$27,244	\$33,173	\$5,929	252,805	\$749,440,423
Mississippi	\$21,680	\$27,238	\$5,558	288,595	\$802,005,505
Missouri	\$24,461	\$30,417	\$5,956	398,377	\$1,186,366,706
Montana	\$20,339	\$27,583	\$7,244	45,079	\$163,276,138
Nebraska	\$29,051	\$30,587	\$1,536	108,346	\$83,209,728
Nevada	\$28,814	\$32,039	\$3,225	274,055	\$441,913,688
New Hampshire	\$27,551	\$35,200	\$7,649	66,510	\$254,367,495
New Jersey	\$24,963	\$34,431	\$9,468	607,496	\$2,875,886,064
New Mexico	\$20,626	\$26,953	\$6,327	206,688	\$653,857,488
New York	\$23,749	\$32,286	\$8,537	1,757,364	\$7,501,308,234
North Carolina	\$22,784	\$28,401	\$5,617	834,880	\$2,344,760,480
North Dakota	\$29,625	\$36,576	\$6,951	38,508	\$133,834,554
Ohio	\$22,929	\$31,372	\$8,443	746,400	\$3,150,927,600
Oklahoma	\$24,881	\$30,193	\$5,312	301,260	\$800,146,560
Oregon	\$26,327	\$31,098	\$4,771	279,925	\$667,761,088
Pennsylvania	\$26,096	\$31,870	\$5,774	812,098	\$2,344,526,926
Rhode Island	\$30,423	\$35,673	\$5,250	80,586	\$211,538,250
South Carolina	\$21,180	\$27,686	\$6,506	403,491	\$1,312,556,223
South Dakota	\$24,899	\$31,037	\$6,138	45,157	\$138,586,833
Tennessee	\$22,122	\$30,074	\$7,952	564,949	\$2,246,237,224
Texas	\$24,047	\$30,804	\$6,757	2,963,969	\$10,013,769,267
Utah	\$27,432	\$33,406	\$5,974	142,082	\$424,398,934
Vermont	\$29,376	\$31,453	\$2,077	28,903	\$30,015,766
Virginia	\$24,900	\$31,831	\$6,931	588,385	\$2,039,048,218
Washington	\$28,613	\$35,865	\$7,252	437,484	\$1,586,316,984
West Virginia	\$24,872	\$30,250	\$5,378	156,585	\$421,057,065
Wisconsin	\$28,345	\$32,708	\$4,363	315,219	\$687,650,249
Wyoming	\$25,838	\$35,160	\$9,322	26,309	\$122,626,249

NOTE: Population of high school graduates includes those with an equivalent of a GED or diploma. Earnings defined by annually reported wages. Source: U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates, "Median Earnings by Educational Attainment" Subject Table.