How Education & Job Training Boost Productivity

There are very strong links between education, productivity and economic growth. Workers with more skills are more productive, and greater productivity leads to greater income.

A study by Federal Reserve economists examined the factors contributing to greater state prosperity over a 65-year period and found that a state’s high school and college graduation rates, along with the rate of patents, were the primary factors explaining which states experienced more rapid growth in per capita income from 1939 to 2004.¹ Another research article studying states from 1967 to 1993 found that the more a state spent on education the greater the growth in personal income.²

But the economic gains to society from education go beyond the obvious link between skills and productivity. Higher levels of education also correspond with healthier people, lower rates of mortality, and lower rates of crime.³ Greater parent education correlates positively with children’s health, cognitive abilities, and academic achievement.⁴ The children of more highly paid workers are also less likely to grow up in poverty, less likely to be poor as adults, and more likely to be better educated and well paid as adults, and therefore less likely to rely on public assistance. All of these factors contribute to a more productive society with not just more productive workers, but also fewer public and private resources spent helping people who struggle because they haven’t been able to achieve their full potential and fewer resources devoted to caring for an unhealthy
Those with a four-year degree earn substantially more than those without such a degree so it is not surprising that metro areas with a higher percentage of college grads have higher average earnings. But that’s not the only benefit to the community. A higher graduation percentage also boosts the wages of those without degrees as well, and this spillover effect is substantial. And metro areas with higher percentages of college grads are more productive, and the productivity gains are spread beyond the college-educated workers themselves.\(^6\)

Investing in school facilities or in K-12 education generally has economic payoffs. School districts across the country have underinvested in facilities for years, and many public school buildings have deteriorated to the point that student attendance and performance is adversely affected.\(^7\) Investments in school facilities have been shown to lead to improvements in student test scores.\(^8\)

The long-term benefits of quality early childhood education programs have been well documented.\(^9\) Universal pre-school for four-year-olds improves a child’s cognitive, social, and character development, with long-term effects not just on school test scores but on lifetime earnings. The positive effects persist well into adulthood despite the “test score fading” that occurs with most early childhood interventions; moreover, the benefits from public pre-school are likely to outweigh the costs of the program several times over.\(^10\) And investments in pre-school could help to ensure that the growth in productivity would be broadly shared and would reduce income inequality.\(^11\)
Post-secondary education continues to be a critical investment for states as well. The returns to a college degree continue to be substantial, even as the current economy has made it tougher for recent graduates to find jobs that match their education level. Between 1979 and 2003, the real median hourly wage for those with a bachelor’s degree or higher rose 22 percent, while wages for those with a high school diploma were unchanged and wages for those with less than a high school education fell 14 percent. While median wages of workers at all education levels have dropped since 2003, the college wage premium — the percentage gain in earnings for those with a bachelor’s degree or higher compared to those with just high school — has remained at about 85 percent.

Increasing access to post-secondary education allows more children the opportunity to achieve upward mobility and to contribute their full potential to strengthening our overall economy. The gains for individual students and for our overall economy can be particularly large when opportunities are expanding for those who face the greatest barriers to success: lower income children, immigrants, and minorities. Increasing education levels is an important way to boost productivity, and to make possible the growth in income that can lead to a higher standard of living for everyone. For example, higher education levels are associated with technological advances and with a greater

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**Benefits of Key Investments Far Outweigh Costs**

Costs and Benefits Per Child of Three Quality Early Learning Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Earnings benefits</th>
<th>Program costs</th>
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<tbody>
<tr>
<td>Full-day Pre-K At Age 4</td>
<td></td>
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<tr>
<td>Educare</td>
<td>$120,000</td>
<td>$80,000</td>
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<tr>
<td>Nurse Family Partnership</td>
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degree of entrepreneurial development, both important sources of growth in productivity and jobs.

Job training also increases productivity. Customized job training programs, operated by community colleges in many states to provide training tailored to the needs of an employer, are cost-effective not only as a means of increasing worker productivity but as a means of inducing new business activity.\textsuperscript{13}


